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RESEARCH ON INTERNAL CONTROLS AND AUDITING. NAVY FINANCIAL MANA--ETC(U)
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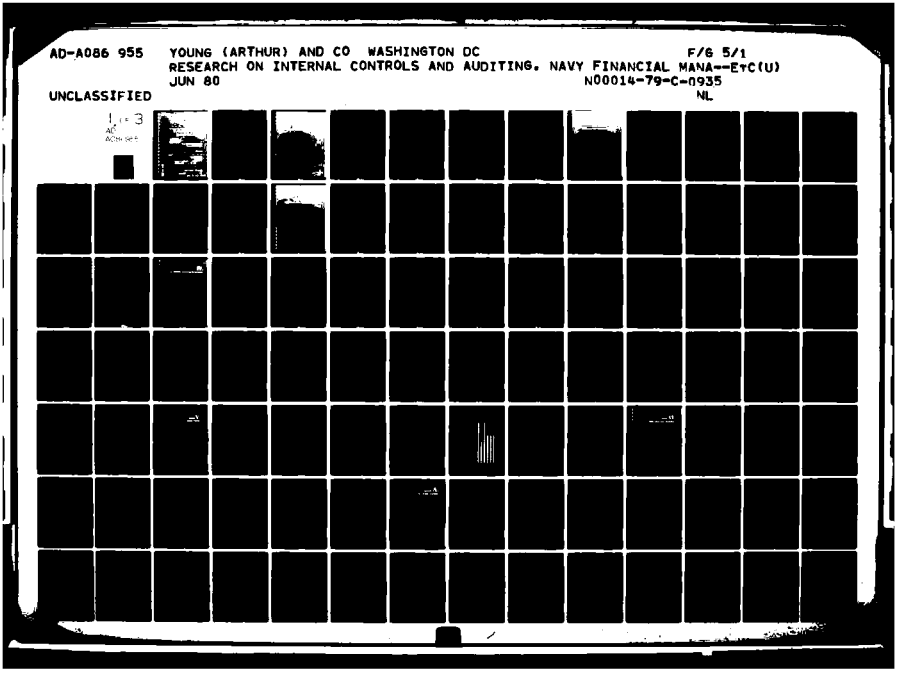

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VOLUME III

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I. INTRODUCTION

The purpose of this volume is to present the results of our efforts related to Task 2, (Part II) of our project task plan. This task was designed to enable our project team to develop an understanding of the Navy's existing and developing ADP internal controls and the current practices of the Naval Audit Service. This knowledge was needed to guide our research efforts and provide a basis from which recommendations to improve the internal control environment in the Navy could be made.

This chapter provides a concise explanation of this volume's contents and our objective in reviewing each research area. The remainder of this introduction discusses each chapter and the appendices contained in this volume of our report. The discussion is divided into the following:

- Naval Audit Service
- NAVDAC and the System Development Process
- The NARDAC Operating Environment
- System Surveys
- System Descriptions (Appendices A & B)
- Observations and Conclusions
- Impact of Task 2 on Future Efforts.

1. NAVAL AUDIT SERVICE

In conducting our research it was important to understand the organization that will ultimately use the results of our research efforts. This knowledge was necessary to develop recommendations tailored to the needs of the Navy and which are realistic within the Navy's operating environment. We obtained information on the Audit Service, its organization and activities, met with various members of the Audit Service and reviewed pertinent documentation. The results of our efforts are presented in Chapter II of this volume of our report.

2. NAVDAC AND THE ADP SYSTEM DEVELOPMENT PROCESS

Another area of understanding which was required to conduct our research was knowledge concerning the Navy's System Development process. Our objective was to gain insight into the system development guidelines, practices and procedures followed in the Navy. In order to develop this knowledge we met with various members of the Naval Data Automation Command (NAVDAC), reviewed pertinent documentation and developed a chronology of the AIS Development and Approval process within the Navy. The information we obtained in this regard is presented in Chapter III of this volume.

3. The NARDAC OPERATING ENVIRONMENT

Controls which operate in computer centers are needed to complement other internal controls related to individual applications as well as controls over the system development process. The NARDAC organization was selected as representative of the Navy's ADP operating environment. Our purpose was to understand the policy, procedures and organization used in the Navy to control data processing center operations. Our intention was not to review NARDAC operations in

detail, but to understand the organizational structure, security environment and other internal controls related to the NARDAC operating environment. The results of our efforts are presented in Chapter IV of this volume.

4. SYSTEM SURVEYS

Finally, we were interested in identifying the types of advanced systems the Navy is developing. Since no non-tactical distributed systems were operating in the Navy when our project began, we conducted a survey of systems currently under development. The objective of this task was to identify systems under development which had characteristics that were compatible with our analysis of advanced systems. Chapter V of this volume presents the results of our survey and briefly discusses the systems selected for further review. Appendix C of this volume contains the results of our survey of individual systems considered for review.

5. SYSTEM DESCRIPTIONS

After completing our system surveys we selected IDA/FMS and PASS Phase II/SDS for more in-depth reviews. Our objective was to understand the control features of these systems and to document the flow of data through these two systems. This system knowledge gave our project team a sound basis for evaluating the types of controls which would be most effective in the application systems the Navy was developing. We met with members of design agencies, project management personnel, and reviewed system documentation in developing our understanding of these systems. Appendices A and B present the results of our review of the IDA/FMS and PASS Phase II/SDS systems.

6. OBSERVATIONS AND CONCLUSIONS

Chapter VI of this volume presents a discussion of key observations we have made during the conduct of this phase of our project. It is designed to present a summarization of ideas relative to the Navy's ADP environment and discusses items which impact the internal control environment in the Navy.

7. IMPACT OF TASK 2 ON FUTURE EFFORTS

Our project efforts have reconfirmed our view that the EDP environment is dynamic and rapidly changing. This project is properly timed and provides the Navy with the opportunity to devise ways to cope with the new EDP environment in a positive manner.

Our future research efforts will focus on developing technology, not specific Navy applications currently under development. Advanced EDP technology will be emphasized in our task plan as follows:

- General EDP controls (Task 3)
- Auditor's Approach and Application Internal Controls (Task 4)
- Auditing Techniques (Task 5).

II. NAVAL AUDIT SERVICE

This Chapter summarizes the background information we obtained on the Naval Audit Service, its organization, activities and general audit policies. Our objective in obtaining this information was to develop an understanding of the organization that will use the results of our research effort. This knowledge includes information concerning current guidance, policy, procedures and practices. Our discussion is divided into the following sections:

- Organization
- Guidance for Auditing in the Navy
- Computer Audit Practices.

A discussion of each topic is presented in the remainder of the Chapter.

1. ORGANIZATION

The Naval Audit Service is the internal audit organization of the Navy. It is headed by the Auditor General of the Navy who is a member of the military and serves collaterally as the Director of the Naval Audit Service. The Auditor General of the Navy reports to the Under Secretary of the Navy. This reporting relationship is clear recognition of the importance of internal audit within the Navy and provides the organizational independence required for effective auditing. The Audit Service is headquartered in Falls Church, Virginia

and the operating elements of the organization are located in four regional offices: Northeast region, Camden, New Jersey; Capital region; located with Headquarters in Falls Church, Virginia; Southeast region, Virginia Beach, Virginia; and the Western region, San Diego, California. An organizational chart of the Naval Audit Service is presented in Exhibit II-1.

The Naval Audit Service's responsibilities can be summarized briefly as follows:

> Perform independent evaluations of programs, activities, systems, procedures and other operations involving the expenditure of funds, utilization of resources, or accomplishment of management objectives.

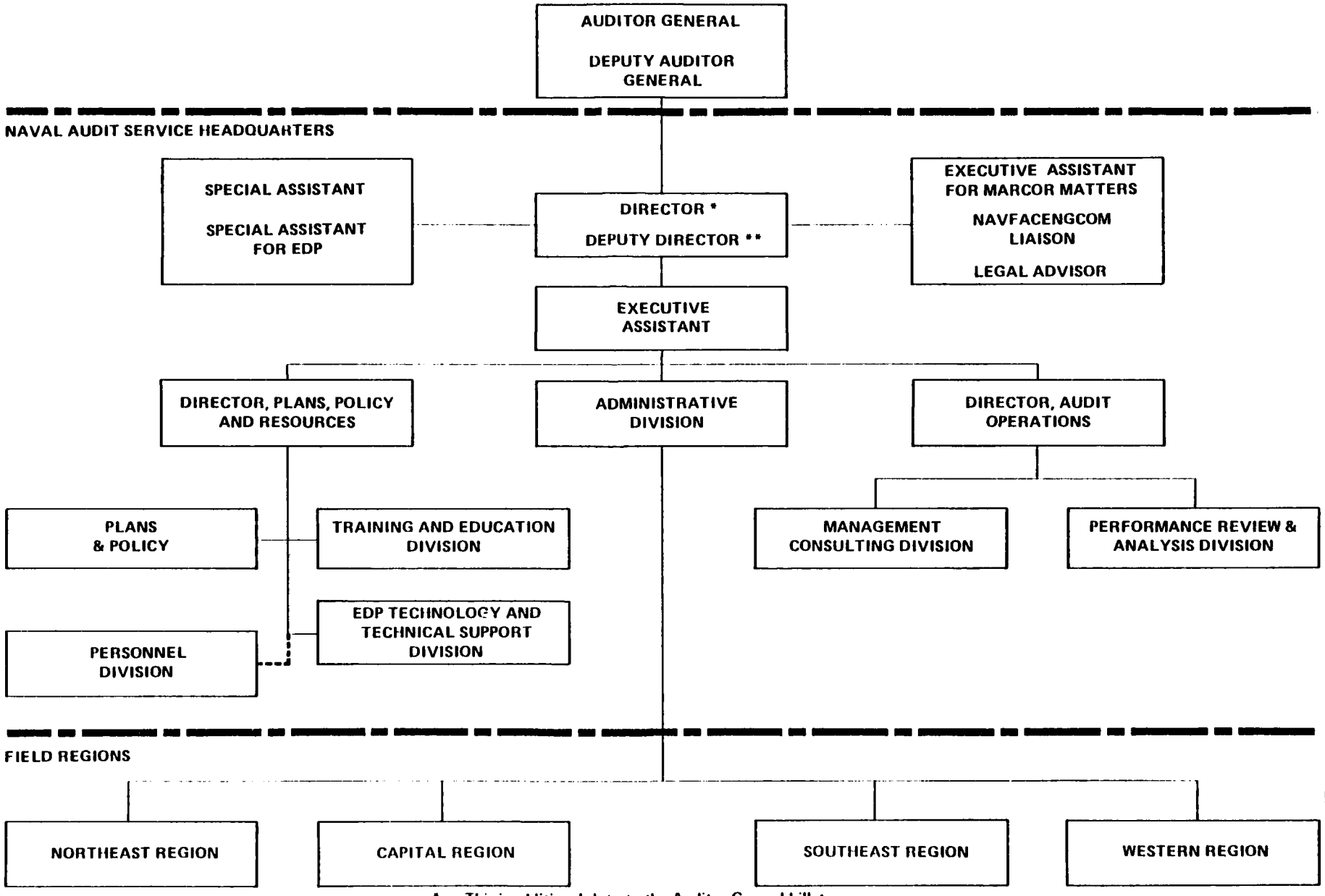
The purpose of the Naval Audit Service is to provide service to management at all levels through the objective performance of independent evaluations to determine the adequacy and effectiveness of practices, procedures and controls. This objective is accomplished by presenting the results of audits, making constructive recommendations and providing consultation with management to assist in the formulation of action plans.

The thrust of the Naval Audit Service's mission is somewhat unique. There are internal control and compliance with regulation responsibilities. However, there is also a substantial emphasis on management efficiency and monetary conservation. These responsibilities are certainly worthy of emphasis, but they add an additional dimension to the Auditor's responsibilities.

2. GUIDANCE FOR AUDITING IN THE NAVY

In order to obtain a better understanding of the Naval Audit Service, its mission and objectives, we obtained various directives,

Organizational Chart of the Office of the Auditor General of the Navy



* This is additional duty to the Auditor General billet.

** This is additional duty to the Deputy Auditor General billet.

EXHIBIT I

reports and publications concerning the Naval Audit Service. The purpose of our review was to gain insight into the mission, organization, and general policies of the Audit Service. A listing of the pertinent documentation we reviewed is presented in Exhibit II-2 at the end of this chapter. We have familiarized ourselves with the Naval Audit Handbook, several Naval Audit programs, audit reporting techniques and audit management tools. In the remainder of this section we discuss several of these documents.

(1) Naval Audit Handbook

The Naval Audit Handbook is designed to publish policy, procedures and instructions for the conduct of audits in the Navy. It discusses audit concepts and purposes, approaches to auditing and procedural and administrative matters. The handbook is well organized, easy to understand and provides the general guidance needed by an audit organization with as many distant and diverse locations as the Naval Audit Service. Examples and exhibits are utilized to illustrate the concepts of time reporting, standard audit report formats, and the audit utilization process. This type of audit handbook is a valuable tool to all members of the Naval Audit Service.

(2) Guidelines for Auditing Computer-Based MIS Development

This manual provides a description of ADS systems design. It is prefaced with the statement that the manual is a surface treatment of a very detailed and arduous task. It does provide an analysis of system development audit considerations and methods to apply at certain points during such a review. It also divides responsibilities for various audit evaluation steps between the auditor and the computer audit specialist.

(3) Audit Programs 19 A,B,C

The Audit Program 19 series is designed to segregate into 3 specific programs the functional programs related to EDP. EDP Facilities Audits, Systems Development Audits, and Application Systems Audits are the three areas addressed and each program provides comprehensive guidance for auditing these EDP functional areas. Two of these programs are relatively new, having been issued only last summer. The third has only been issued as a draft copy.

We find these types of audit tools useful and believe they are valuable to the members of the Audit Service. They form the foundation of the Audit Service.

3. COMPUTER AUDIT PRACTICES

This section summarizes our findings regarding computer audit techniques utilized by the Naval Audit Service. The development of auditing techniques compatible with advanced EDP technology requires a sound understanding of present Naval Audit Service practices.

Presently different audit approaches are followed in individual regions. For example, some regions are heavily involved in system development audits, others concentrate on facilities audits, while still others spend a signficant amount of their resources filling audit retrieval requests. This research is evidence of the Naval Audit Services efforts to develop a common approach and our efforts should assist in providing a basis for coordinating approaches between regions.

Ideally, consistent audit practices and approaches should be

followed by each region. This requirement is particularly critical in an advanced EDP system environment. However, it is clear that computer auditing in the Navy has recently received additional attention. Under these circumstances, the lack of consistency is understandable and in many respects, the variety of practices may even prove beneficial in deciding on a consistent Navy-wide approach. We feel the Audit Service recognizes the importance of consistency and as indicated by this project, is interested in developing consistent and innovative auditing techniques to be employed by Navy auditors.

We have been impressed with the experience and professionalism of the Audit Service personnel we have met. It is clear that the trend to more sophisticated EDP systems will tax the expertise of the computer auditors and the entire audit staff. Their dedication and skills will be invaluable as the Audit Service moves into a new decade of service to the Navy. The Audit Service will have to respond to the changes in the Navy's ADP environment in contining to meet its mission objectives.

Documents Reviewed Which Pertain to the Naval Audit Service

1. Department of the Navy Audit Manual for Management. SECNAVINST 7510.7A dated 28 December 1978 with change 1
2. Naval Audit Handbook. AUDGENAV P-7520.1 dated 18 June 1979
3. The Naval Audit Service Should Be Strengthened. Report to the Congress by the Comptroller General of the United States. November 11, 1977
4. Audit Program No. 19A - EDP Facility Audits. AUDGENAVNOTE 7500 dated 17 July 1979
5. Audit Program No. 19B - EDP Systems Development Audits. NAVAUDSVCNOTE 7500 dated 21 February 1979
6. Audit Program No. 19C Application Systems Audits. Draft Copy
7. A Systems Audit of the Pay and Personnel Administrative Support System/Source Data System (PASS/SDS) at Chief of Naval Operations (OP-01) Washington, D.C. Naval Audit Service, Audit Report D 30079 dated 1 August 1979
8. Navy Regional Data Automation Center, San Francisco, Alameda, California (including Naval Data Automation Facility, Lemoore, California). Naval Audit Service, Audit Report A10078 dated 5 June 1979.
9. Navy Finance Center, Cleveland, Ohio Allottment Payments System. Naval Audit Service, Audit Report dated 12 April 1979
10. Automatic Data Processing at Headquarters Marine Corps (HQMC). Naval Audit Service, Audit Report C35529 dated 12 September 1979
11. Financial and Supply Management Training Course; Navy Comptroller Manual Text. Navy School of Health Sciences, Bethesda, MD May, 1978
12. Internal Audit Reports. NAVAUDSVCINST 7520.8 dated 1 October 1976
13. Guidelines for Auditing Computer - Based MIS Development. Naval Audit Service.
14. Computerized Auditing in the Naval Audit Service. Naval Audit Service.

15. EDP Systems Audits as of 11/07/79. Naval Audit Service, Computer Listing dated 11/8/78

16. Annual Audit Plan. Naval Audit Service, Computer Listing dated 11/20/79

III. NAVDAC AND THE ADP SYSTEM DEVELOPMENT PROCESS

This chapter discusses the Navy's Data Automation Command (NAVDAC) and internal controls related to the Navy System Development Process. One of our initial project tasks was designed to enable the project team to become familiar with the Navy system of internal controls related to distributed systems. Our preliminary efforts revealed that presently there are no major non-tactical distributed systems operating in the Navy. We believe this situation provides the opportunity to emphasize internal controls to system designers and management in new systems development efforts at the optimum point in time. By addressing the question of internal controls in distributed processing systems now, the Navy will be able to consider available internal controls in the system design stage and thus reduce or eliminate the need for system modifications and retrofits.

This chapter of our report presents a summary of our activities associated with our review of the Navy's present system development process. Our objective was to develop an understanding of the practices and procedures used in the Navy to control the system development process. In order to facilitate our discussion, we have divided this chapter into the following topics:

- NAVDAC
- Navy System Development Process.

1. NAVAL DATA AUTOMATION COMMAND (NAVDAC)

The Naval Data Automation Command was established on January 1, 1977 as an echelon-two shore activity under command of the Chief of Naval Operations, and sponsored by the Director, Command and Control, and Communications Programs. Its creation came about as a result of the recommendations of the Navy ADP Reorganization Implementation Study Group. In addition to the Headquarters Staff, the Naval Data Automation Command operates seven Navy Regional Data Automation Centers, the Department of Defense Computer Institute and the Automatic Data Processing Selection Office.

The overall mission of the Naval Data Automation Command is to administer and coordinate the Navy's Non-tactical ADP program. This responsibility includes collaboration on ADP matters with all ADP claimants; development of policy and procedures; approval of systems development; acquisition/utilization of ADP equipment and service contracts; sponsoring of ADP technology; and career development and training of ADP personnel.

Specific functions of NAVDAC include:

- Provide staff support to the Navy's Senior ADP Policy Official (Assistant Secretary of the Navy (Financial Management)), the Chief of Naval Operations and the Director, Department of the Navy Automatic Data Processing Management. These organizational relationships are illustrated in Exhibit III-1.

- Develop Navy ADP policies, goals, and objectives

- Manage, control, and direct ADP field activities assigned

Navy Organization for ADP Management

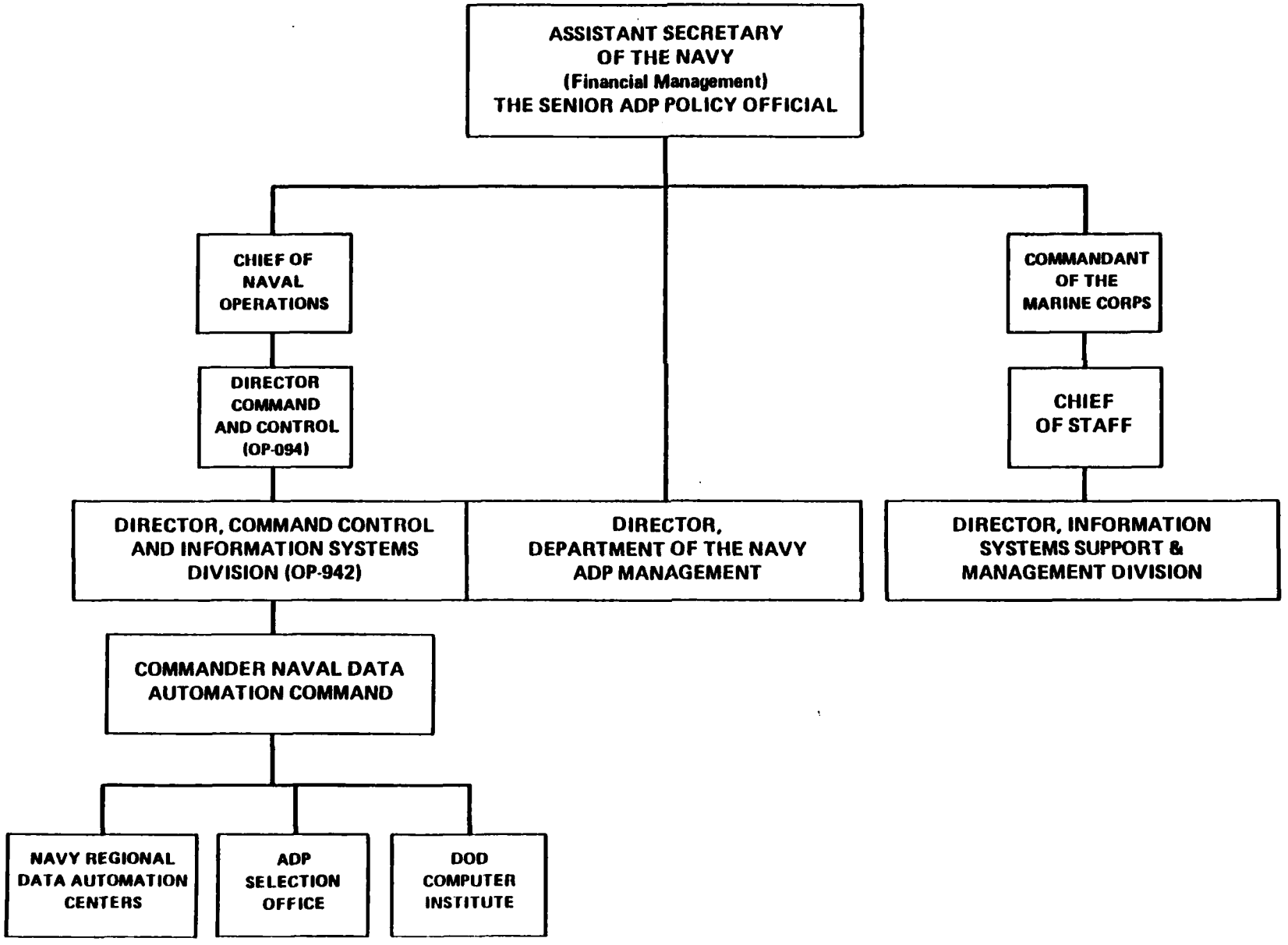


EXHIBIT III-1

- Provide guidance for the review of Navy ADP programs and budgets

- Review and/or approve automated data system plans and procurements. Review and approval is accomplished at differing organizational levels dependent on the dollar value of the system

- Coordinate ADP systems for standardization and to minimize duplication

- Participate in the coordination of career development and training

- Prepare Navy ADP technical standards.

The mission does not include responsibility for Marine Corps ADP systems.

A chart depicting the NAVDAC organization is included as Exhibit III-2. Our initial contact with the Naval Data Automation Command was with the Director, Systems Evaluation, and key members of his staff. The Director, Systems Evaluation provides staff support in the review and evaluation of the technical, operational and economic aspects of all plans and presents these plans and proposals to appropriate approval authorities. The Director is responsible for life cycle management planning and evaluation of Navy automated information systems and insures that projects are in compliance with other policies, plans and standards.

As part of our initial contact with the Naval Data Automation Command, several key documents were obtained. Exhibit III-3 provides a listing of these documents. Our purpose was to develop, from Navy ADP policy directives, an understanding of the Navy procedures for

Organization of Naval Data Automation Command Headquarters

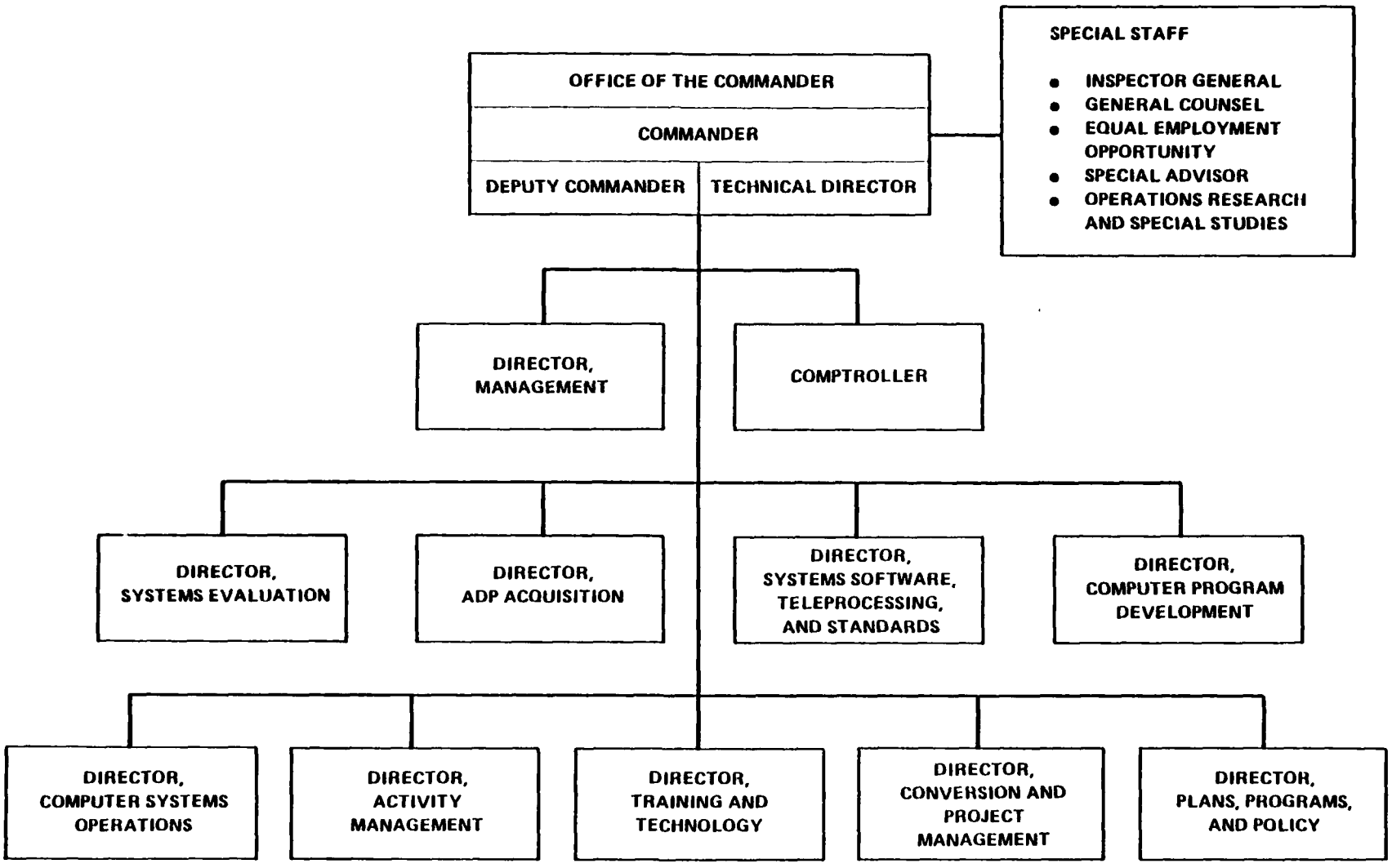


EXHIBIT III-2

Documentation Reviewed Which Pertains to Navy ADP Systems

1. Naval Data Automation Command Headquarters Organization Manual. NAVDACHQINST 5430.1 dated 20 October 1978
2. Department of the Navy Automatic Data Processing Review and Evaluation Program. OPNAVINST 10462.14 dated 19 May 1971
3. Specification, Selection and Acquisition of Automatic Data Processing Equipment (ADPE). SECNAVINST 5236.1A dated 30 April 1974
4. Life-cycle Management of Automated Information Systems Within the Department of the Navy. SECNAVINST 5231.1A dated 20 November 1979
5. Automatic Data Processing Approval Authority and Acquisition/Development Thresholds; delegation of SECNAVINST 5230.6 dated 2 November 1979
6. Navy ADP Reorganization Study Implementation Plan Report. Volumes 1 and 2. Dated 21 October 1976
7. Naval Data Automation Command Briefing. Dated 14 February 1978
8. Department of the Navy Automatic Data Processing Program Reporting System (ADPPRS) -- Resources Accounting. SECNAVINST 5238.1A dated 15 February 1973 with change 1
9. Major Data Processing and Telecommunications Acquisition Plans of Federal Executive Agencies. Fiscal Year 1979 - Fiscal Year 1984. Office of Management and Budget. January, 1979
10. Department of the Navy Automatic Data Processing Program. SECNAVINST 5230.4 dated 3 May 1976
11. Safeguarding Personal Information in Automated Dated Systems. SECNAVINST 5239.1 dated 10 December 1975 with change 1
12. Federal COBOL Compiler Testing Service (FCCTS). SECNAVINST 5234.1A dated 27 October 1976
13. Department of the Navy Guidelines for Non-Tactical ADP Planning. SECNAVNOTE 5230 dated 26 July 1979
14. Information Processing Standards for Computers (IPSC) Program. SECNAVINST 5200.28 dated 29 September 1971

automated information systems development. Exhibit III-5 (presented later in this chapter) provides a graphic interpretation of the Navy's development and approval process. This process is discussed in greater detail in the next section of this chapter.

Although NAVDAC is a relatively new organization, several key documents are in various stages of development within the NAVDAC organization. One of these documents is the Naval ADP Security Manual. This document is currently available in the draft stage and identifies key areas of ADP security, including a Risk Assessment Evaluation Guide. This Risk Assessment Guide, presently being conducted by the various NARDACs, is an effective method of raising security consciousness among ADP operating installations. Another significant effort is the Naval Data Automatic Command Inspector General's ADP Inspection Guide. This guide takes requirements from various instructions and publications, including the GAO Audit Guide, and integrates them into a check list.

2. SYSTEM DEVELOPMENT PROCESS

An understanding of the Navy's ADP system development process is essential to this research effort. To obtain this understanding, we reviewed Navy system development policies and procedures and held discussions with Naval Data Automation Command personnel. Our research was directed toward two areas of study. First, we obtained an understanding of the Navy's organization for managing ADP. Our efforts in this regard were summarized in the previous section. With a knowledge of the Navy's ADP organization, we were then able to proceed into the next area of concern, that of understanding ADP system development within the Navy.

Navy ADP system development and life cycle management are supported by logical and complex procedures. These ADP system development procedures combine system design and testing with the

acquisition and programming/budgeting processes and approval levels are regulated by the dollar value of the acquisition.

Contained in the development procedures are reviews, audits and milestone approvals to insure that there is a need for the system, that the appropriate alternative has been selected and that the system design meets the standards of efficiency and effectiveness set for the system. These system development audits and reviews are graphically presented in Exhibit III-4. During these audits and reviews, the strength of internal controls and the ability to audit data contained in the system can be determined. Recommendations to strengthen internal controls and auditability can also be made.

Exhibit III-5, Chronology of Automated Information System (AIS) Development and Approval within the Navy, provides a graphic interpretation of our understanding of the system development process. The development process requires appropriate documentation to be prepared during the various stages of system development. There are also management reviews called for if developmental efforts exceed projected budget and time restraints. These requirements lead to a more manageable development process and prohibit uncontrolled projects from rambling on. The development process is fairly new but should increase the quality and manageability of the Navy's system development efforts.

EXHIBIT III-4

AIS Systems Development Reviews

CDR: Critical Design Review - A formal review of the final draft of a computer program may be conducted on two or more programs at one time.

FCA: Functional Configuration Review- Verifies code re-program specifications and notebooks.

FQR: Functional Qualifications Review - Validate performance and results.

PDR: Preliminary Design Review - A formal review of the initial draft of a computer program specification to assure that the design is in accordance with system requirements.

RAR: Requirements Analysis Review - Review operational, functional, and technical requirements.

SDR: Systems Design Review - Review of system's hardware, software and telecommunications requirements.

SRR: Systems requirements Review - System's application software requirements.

Chronology of Automated Information System (A

DEVELOPMENT PROCEDURES	MISSION ANALYSIS PROJECT INITIATION	MILESTONE Ø APPROVAL	CONCEPT DEVELOPMENT	MILESTONE I APPROVAL	DEFINI
Major Tasks Accomplished During Phase	• Identify Mission Element Need • Validate Need • Recommend the Exploration of Alternatives	• Authority is Given to Explore and Develop Alternative Concepts	• Develop Alternatives • Designate Project Manager • Modeling and Simulation of Concepts • Demonstration of Alternatives (Optional) • Economic Analysis • Acquisition Strategy • Validate AIS Requirement • Analyze Requirements	• Decision to Proceed to Definition/Design of an AIS Based on a Single Concept • Funds Programmed or Budgeted	• Function and Proc are Detail • Objective Perform Set Forth
Documentation	• Mission Element Need Statement (MENS)		• System Decision Paper (SDP) • Project Management Plan • Acquisition Documents • Security Analysis		• Syst • Syst • Upd • Proc • Test • Qua • Con

GENERAL NOTES ACCOMPANYING CHRONOLOGY

(1) NAVDAC coordinates AIS approvals for ASSTSECNAV (FM).

(2) Program sponsors are responsible for validating requirements and programming/budgeting funds.

(3) Approving Authority Coordinates with GSA. Copies of documents go to NAVDAC.

(4) Approval authorities are to provide for the periodic audit of AIS development.

(5) The Automated Data System Plan (ADS Plan) is similiar to the SDP and has been used for development occurring before the requirement for an SDP.

(6) The design of the system should facilitate a functional and a technical audit of the AIS.

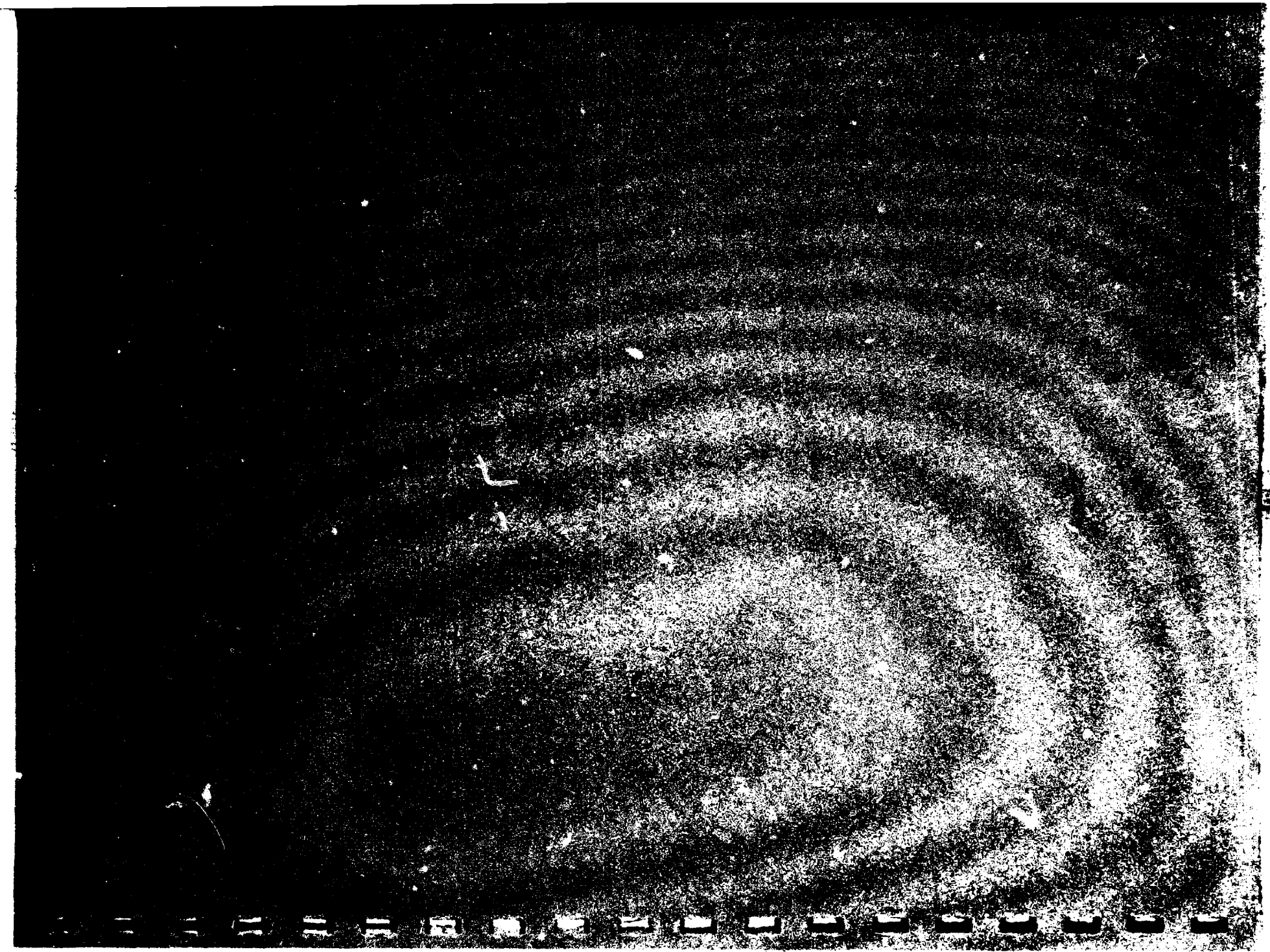
EXHIBIT III-5

n System (AIS) Development and Approval within the Navy

NE I AL	DEFINITION/DESIGN	MILESTONE II APPROVAL	SYSTEM DEVELOPMENT	MILESTONE III APPROVAL	DEPLOYMENT/OPERATION
ed to n of an Single Concept ed or Budgeted	• Functional Requirements and Processes to be Automated are Detailed • Objectives, in Terms of *Performance Measurements*, Set Forth	• Decision to Proceed to System Development	• Develop, Integrate, Test and Evaluate the AIS • Computer Programs and Data Bases Developed • Functional Configuration Audit • Physical Configuration Audit • Product Verification Review • Verify that System Satisfies Design and Functional Requirements • Site Readiness Review	• Decision to Deploy and Operate the System at Operational Sites	• Acquire, Deploy and Operate System • Maintain and Modify System • Performance Education
	• System Design • System Specs • Updated SDP • Procurement • Test and Eval • Quality Assurance • *Configuration Mgmt.* } Plans		• Programs and Documentation • Maintenance Manuals • *User Manuals* • Operation Manuals • Updated SDP • Test Reports • Solicitation Document		

unds.

development occurring



IV. THE NARDAC OPERATING ENVIRONMENT

This chapter describes the data processing operations of Navy Regional Data Automation Centers (NARDACs). Our visits to NARDACS were designed to identify ADP internal controls within the Navy's ADP operating environment. Throughout Task 2 we emphasized the internal control features of the Navy's data processing environment to guide and support our internal controls research.

The NARDAC concept is relatively new and is being executed over a period of time. We have discussed this concept with members of the Navy's data processing community and have included it in this description. Similarly, the NARDAC/user relationship is being redefined. There are about 350 Navy data processing centers, including seven NARDACs in the Navy. We selected two NARDACs at which to gain an understanding of the Navy's data processing environment. The NARDACs, located at Washington, D.C. and Pensacola, Florida, were selected for the following reasons:

- NARDACs are important Navy data processing centers and the Navy is moving to increase their importance
- NARDACs provide a concentrated look at a variety of Navy data processing configurations and a variety of applications
- NARDACs serve multiple customers
- The two distributed systems we reviewed, IDA/FMS and PASS Phase II (SDS), will have data processed at NARDACs

- NARDAC Washington, D.C. serves as a data processor for numerous Navy high level offices and commands. Therefore, many distributed systems which will process and distribute information up the chain of command or use high level data bases may have processing done at NARDAC Washington

- IDA/FMS is operational at NARDAC Pensacola. PASS will also be run at NARDAC Pensacola.

We have divided our discussion of the Navy data processing environment into the following sections:

- An Overview of the Navy's Data Processing Environment

- Organization of the NARDAC and the Resulting Internal Controls

- Customer Relations

- Hardware

- Internal Controls

We have met with personnel at the Navy Regional Data Automation Centers located at Pensacola and Washington, D.C. Additional information was obtained from members of the Naval Data Automation Command and through the review of pertinent documentation. The discussion of internal controls is based on this information, not on audit or inspection procedures.

1. AN OVERVIEW OF THE NAVY'S DATA PROCESSING ENVIRONMENT

In 1976, a Navy ADP Reorganization Implementation Study Group made various recommendations to improve the Navy's management of ADP. As a result, the Naval Data Automation Command (NAVDAC) was formed in January of 1977. NAVDAC is the manager of the Navy's ADP efforts. Exhibit IV-1 illustrates the command relationships involved in the management of the Navy's ADP resources.

In order to provide ADP support, NARDACs were formed. NARDAC Pensacola's mission includes the following services:

- Regional non-tactical ADP services to Navy activities
- Manage and direct remote facilities, Naval Data Automation Facilities (NAVDAFs), which provide non-tactical ADP services in their areas
- Design, develop and maintain standard Navy non-tactical automated data processing systems.

NARDACs have been located in areas of heavy concentration of Naval activities. There are currently 7 NARDACs and there is the possibility that additional NARDACs will be formed. NARDACs have utilized existing ADP facilities and equipment. NARDAC, Washington, D.C. was formed in March 1977 from the resources of four data processing facilities. NARDAC Pensacola, was formed in October, 1977 with the transfer of the Naval Education and Training Information Support Activity (NETISA) to NAVDAC and the additional transfer of four other geographically separate data processing centers. Somewhere between 25 to 50 percent of the Navy's ADP resources are presently controlled by NARDACs.

Navy Organization for ADP Management

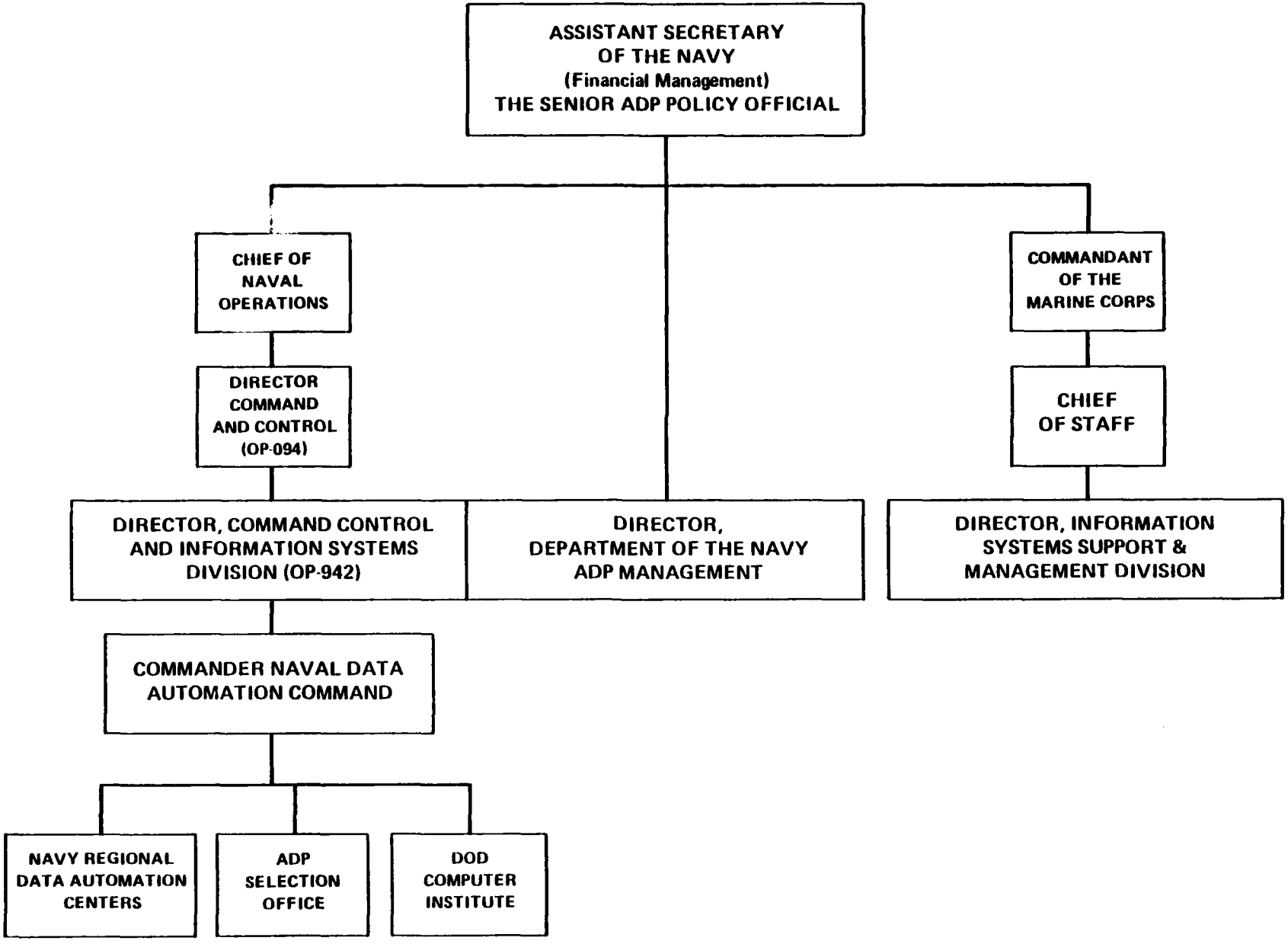


EXHIBIT IV-1

In order to improve the Navy's ADP services, the following have been standardized among NARDACs:

- Organizational structure
- Mission and functions
- Military billet descriptions and civilian position descriptions
- Operating procedures
- Similiar staffing for equivalent work
- Civilian position classification
- Career progression
- Training.

While all NARDACs' adopted the standard organizational structure, they vary in size. The three sizes are 1,200, 317 and 190 personnel. NARDAC Washington will have 1,200 personnel and will be the only NARDAC this large. NARDAC Pensacola will have 317 personnel. Current plans call for all positions and billets to be authorized within two years.

Many of the data processing facilities which became NARDACs are housed in buildings which were originally designed for functions far different from those of a data processing center. This has led to problems in the areas of security, electrical power, floor arrangement of equipment and environmental control. There are provisions in the planning for the Military Construction Appropriation to build dedicated data processing centers or rehabilitate present installations.

NARDACs have been created to provide a range of ADP services to meet a variety of customers' needs. These services range from advising and planning assistance to the processing of data. The NARDAC is not now nor is it intended to be the only type of data processing center in the Navy. NARDACs are envisioned as being in competition with other data processing centers for customer useage. As part of the economic analysis for acquiring new data processing equipment the requestor must examine the merits of using a NARDAC for processing. However, there is no requirement that new applications be processed at a NARDAC.

2. ORGANIZATION OF THE NARDAC AND THE RESULTING INTERNAL CONTROLS

The purpose of this section is to describe the standard organization of a NARDAC. NARDAC Pensacola, a mid-sized NARDAC, is used here for illustrative purposes. The organization described here is the organization toward which NARDACs are moving. An illustration of this organization is presented in Exhibit IV-2. This chart also shows the NAVDAFs assigned to NARDAC Pensacola.

In the following paragraphs, we briefly describe the organization and functions of the various departments of NARDAC Pensacola.

(1) Senior Management

In addition to the Commanding Officer and the Executive Officer, NARDACs have a Technical Director and a Liaison/Planning Officer. The Technical Director is responsible for the technical direction of the NARDAC and the coordination of the various functions performed in the NARDAC. The Liaison/Planning Officer serves as a point of contact for customers. This Officer advises NARDAC management as to various customer requirements and promotes the NARDAC's services to potential customers. The Liaison/Planning Officer also determines customer requirements and integrates these into NARDAC plans for the future.

Navy Regional Data Automation Center
Pensacola

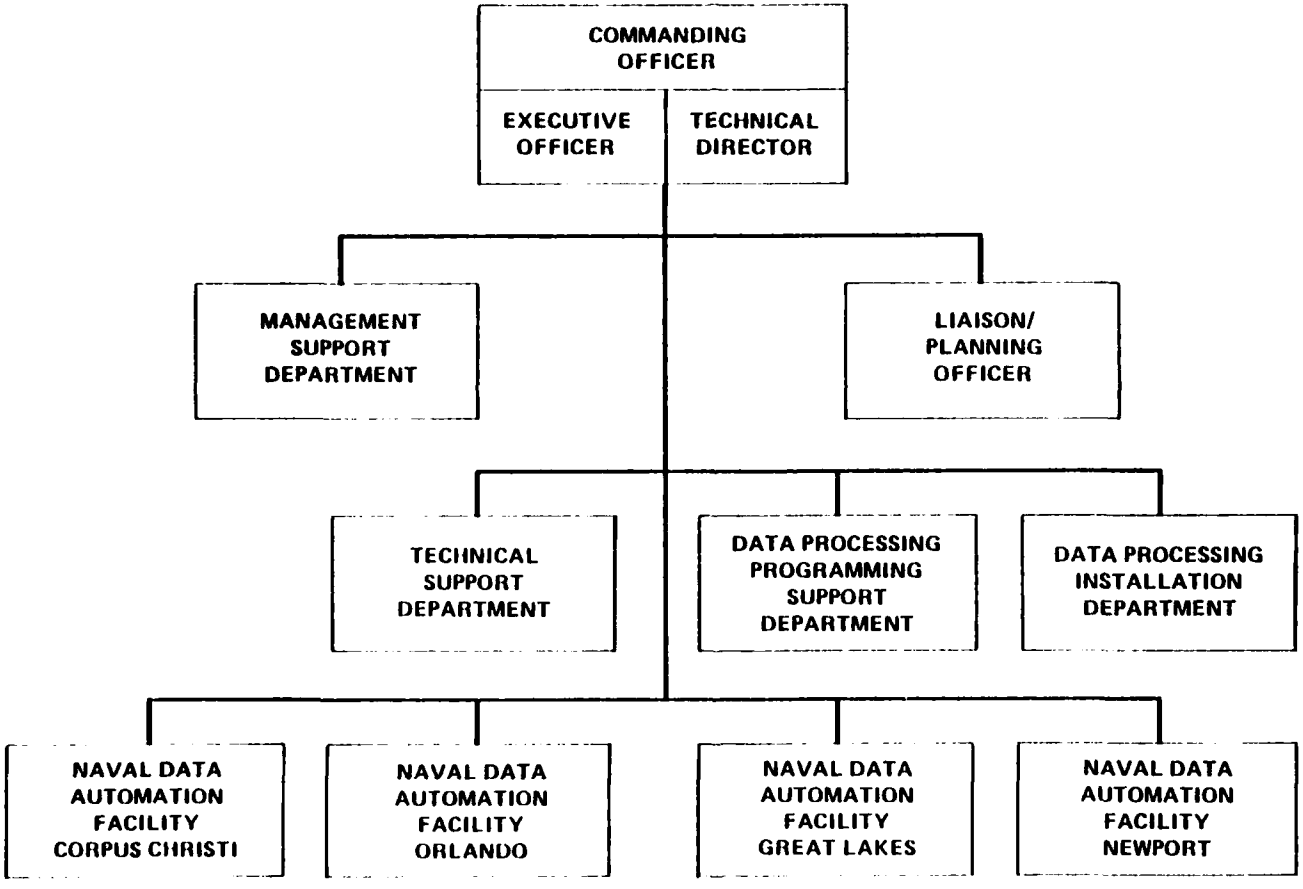


EXHIBIT IV-2

(2) Management Support Department

The functions of the Management Support Department include administration, financial management, personnel mangement and management analysis. This department has two divisions, one of which performs the financial management function while the other accomplishes the remaining functions. At NARDAC Pensacola this department will have 20 people when fully staffed.

(3) Technical Support Department

This department provides ADP technical and management support to other NARDAC departments within the same NARDAC, other NARDACs and other Navy users. Their duties include the review and promulgation of standards, including those for training and documentation. The ADP Technical Security Staff which is part of this department, provides system software for ADP security, interprets standards, issues policy and the security plan. The System Support Division is responsible for developing systems software for telecommunications and data base management. Configuration planning and management and performance evaluation are the responsibility of the Planning and Analysis Division. At NARDAC Pensacola, this department, when fully staffed, will have 40 people.

(4) Data Processing Programming Support Department

This department plans, designs and develops, implements, maintains and documents application programs. The Requirements Analysis and Design Division provides initial customer contact for feasibility studies, system descriptions and functional descriptions. The Systems Engineering and Development Division provides application programming. These two divisions are organized into teams to provide maximum customer service. These divisions also evaluate the efficiency of system and application programs. There are sixty eight positions assigned to this department.

(5) Data Processing Installation Department

The Data Processing Installation Department controls and operates the Data Processing Center which includes the automatic data processing equipment, peripherals, and the teleprocessing network and equipment. It provides batch, teleprocessing and remote job entry data processing services to local and out of area customers. It is the largest department of the NARDAC.

The Installation Management Staff is responsible for budgeting, training and risk management of the data center, including overall security. The Operations Division is responsible for operating the data processing equipment excluding the teleprocessing equipment. The Production Control Division is responsible for production control, scheduling and quality control. Assigned here are the Systems Managers for each of the processing systems operated at the NARDAC and library functions are carried out within this division. The Acceptance Test/Recovery Division is responsible for the acceptance testing of application programs developed for customers by Central Design Agents, such as the Fleet Material Support Office or the Naval Air Logistics Command, as well as those developed internally by the NARDAC Programming Support Department. Systems software is also tested by this group within the NARDAC environment. NARDAC Pensacola is working toward the retroactive acceptance testing of all application programs it now processes. In addition to acceptance testing, during which it analyzes programs, this division also identifies problem areas and applies changes, which are written other organizations to application programs. This division is also responsible for immediate recovery procedures. Within the Acceptance Test/Recovery Division, teams are organized to work with individual applications. The Teleprocessing Division controls and operates the teleprocessing equipment and monitors the status of equipment on an around the clock basis. In addition, it is responsible for system passwords. In coordination with the Production Control Division, it controls teleprocessing equipment.

Within the Data Processing Department, there is a segregation of the operations, control, library, acceptance testing and recovery and the security functions. These functions are organizationally segregated from other functions such as application and systems programming, standards development, ADP systems design and software security. The Data Processing Installation Department, when at full strength, will have 184 of the 317 NARDAC Pensacola positions and billets.

(6) NARDAC Washington

The organization of NARDAC Washington is different from the standard NARDAC organization due to its larger size. The data processing operations and the location of its processing centers are the most significant variables. The organizational variations of two major departments at NARDAC Washington are outlined below.

The Data Processing Programming Support Department is organized to provide support to different types of applications. These are:

- Teleprocessing
- Financial
- Logistics
- Personnel

The Data Processing Installation Department is called a directorate and has three departments; each has different processing equipment. The organization of this directorate by type of processing equipment is:

- IBM equipment located at four sites in Metropolitan Washington

- Univac Equipment located at the NARDAC

- Minicomputers at 26 sites throughout Washington

These departments have the same four divisions as the standard NARDAC Organization: Operations, Production Control, Acceptance Test/Recovery and Teleprocessing. The IBM Department has personnel from the four divisions at each of the four hardware sites. However, plans call for the consolidation of all IBM equipment at the NARDAC facility located in the Washington Navy Yard.

3. CUSTOMER RELATIONS

The NARDAC concept is based on the creation of a demand for its services. NARDACs are organized to offer various levels of service to each user. The level of service concept recognizes that customer requirements for various data processing tasks performed by a NARDAC vary with the user's ADP knowledge, resources, and the type of processing to be accomplished. As the processing functions for each application are essentially similar, these functions are spelled out and the user can select those that the NARDAC will perform and those that the user will retain responsibility for. The level of service options extends from complete system design, implementation and processing to simply the processing of data.

The functional description of the NARDAC organization indicates the levels of service which are available and the level of service concept provides the user with a clear understanding of what type of service is being requested from the NARDAC and what responsibilities must be accepted by the user. The NARDAC can support the user with feasibility studies, functional descriptions, system descriptions, programming and/or maintenance. In some cases, Central Design Agencies will design a system and provide programming support, then present the system to a NARDAC for acceptance testing. In other cases, the NARDAC

will provide programming support to a customer who may have another data processing center run the application. These management and support relationships are diagramed in Exhibit IV-3. ADP long-range planning should be improved within the Navy by this type of cooperative planning being entered into by the NARDAC and the user. The NARDAC will help the user identify hardware and software requirements and thus facilitate NARDAC and NAVDAC planning.

NARDAC customers' work is funded by the direct funding of the NARDAC through the Chief of Naval Operations and the NAVDAC funding chain or by reimbursement from the customer. At NARDAC Pensacola, the FY 80 budget calls for 83% of the funding to be direct to the NARDAC and 17% to be reimburseable work. The desired trend is toward a total chargeback system which is further discussed in Section 5 of this chapter. Non-Navy customers can be supported by Inter Service Support Agreements or other types of agreements, however at this time, NARDAC Pensacola does not serve any non-Navy customers. Their user's can be classified as shown in Exhibit IV-4.

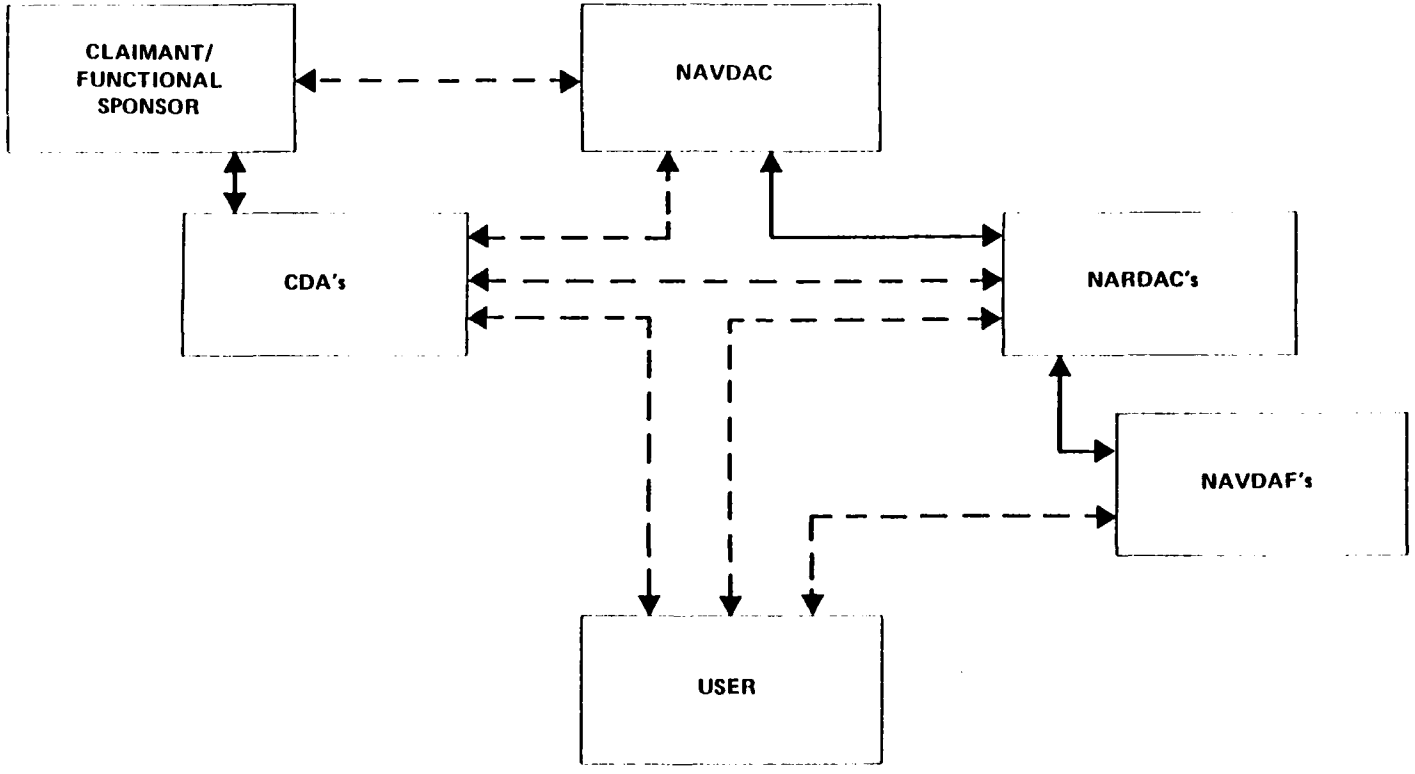
4. HARDWARE

The purpose of this section is to illustrate the data processing equipment at a NARDAC. NARDACs do not possess standardized equipment as they were formed from data processing centers which had no command relationship. Standardization of equipment has been accomplished by the installation of UNIVAC 1100/40 series processing equipment.

NARDAC Pensacola presently has the following hardware processing systems:

- UNIVAC 1100/44. This is a large scale multiprocessing system with four central processors and four input/output controllers. Immediate access to approximately 10 billion characters of data is provided by a removable disk subsystem

Management / Support Relationships



MANAGEMENT RELATIONSHIP ———————

SUPPORT RELATIONSHIP — — — — — —

EXHIBIT IV-3

NARDAC Pensacola Customers

Command	Purpose of System	Equipment
Chief of Naval Education and Training (CNET)	10 separate major ADP systems including Integrated Disbursing & Accounting (IDA). Most are to support training	IBM 360/65 (Being replaced by UNIVAC 1100/44)
Naval Air Rework Facility (NARF)	NARF Applications	UNIVAC 1100/44
Chief of Naval Material (CNM)/NARF	Maintenance Management (3M)	UNIVAC 1100/44
Naval Air Logistics Command (NALC)/NARF	Aviation Engine Management System (AEMS)	UNIVAC 1100/44
Fleet Material Support Office/Naval Air Station Supply	Stock Point Supply System (UADPS-SP)	Burroughs 3500/4700
Various	Civilian/Military (JUMPS) Payroll	Burroughs 3500/4700

The above table does not include systems located at NARDAC Penscola's NARDAFs.

and a data base management system. Communications is controlled by front-end processors called communications/symboint processors (CSPs). The CSPs also control printers, card readers and card punchers. With the UNIVAC 1100/40 system NARDACs have the capability to serve unrelated users simultaneously.

- Burroughs 3500/4700. This is a dual, medium scale computer system with independent processors. Each processor can handle multiple, independent jobs. System communications is controlled through the use of a multi-line controller which permits multiple, simultaneously operating communications lines to input/output channels. The Burroughs hardware gives NARDAC Pensacola the ability to process a variety of business applications concurrenlty using a data base concept.

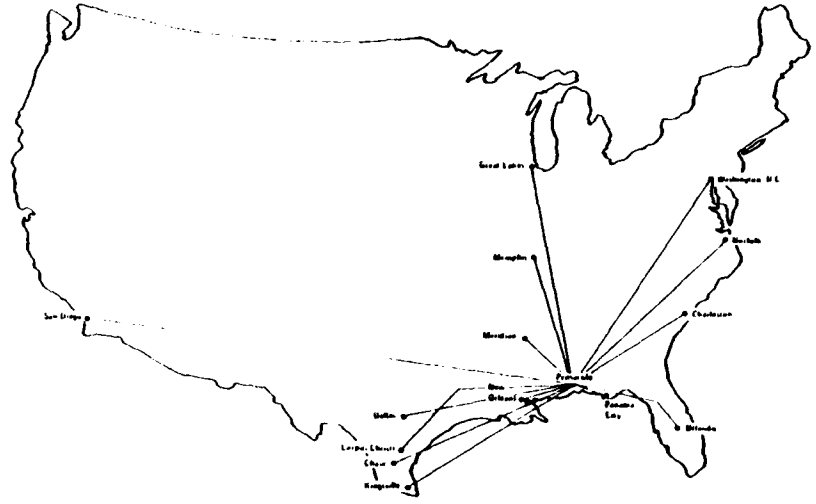
- IBM 360/65. This system supports the multiple applications of the Naval Training Information System (NAVTIS). It is one of the larger mid-size processors. An extensive system of on-line communication is used in conjunction with IBM 360/65. Applications run on this system are being phased over to the UNIVAC. This conversion process should be completed by August, 1980.

NARDAC Pensacola operates communications networks for teleprocessing which are illustrated in Exhibit IV-5. These networks extend along the East Coast, through the midwest and to two sites in California. Each processing system operates an on-line system. There is also an extensive point to point tape system using MOHAWK 2400 equipment and there are currently seventy communications lines into the NARDAC. There are also remote job entry devices located in the Pensacola area. We have not described NARDAC Washington equipment due to the size of the NARDAC and its unique nature.

NARDAC Pensacola Teleprocessing Networks

Burroughs On-Line Teleprocessing Network

IBM On-Line Teleprocessing Network



UNIVAC On-Line Teleprocessing Network

NARDAC Pensacola Off-Line Communication

EXHIBIT IV-5

5. INTERNAL CONTROLS

This section describes the NARDAC internal control environment. Our discussion is divided into two sections: security and other controls.

(1) Security

In this section we describe the security environment of the NARDACs at Pensacola and Washington, D.C. Although this section deals primarily with physical security, we also discuss the draft copy of the Navy ADP Security Manual being written by NAVDAC. Its purpose is the establishment of a Navy program for the security of ADP facilities. This manual is directed toward the NARDAC and other Navy data processing centers. The Draft Security Manual addresses the following topics:

- ADP Security Training
- Auditor Involvement in ADP System Development
- Contingency Planning
- Risk Assessment
- Countermeasures
- Assessments.

Both NARDACs we visited are presently performing a risk assessment to determine vulnerability caused by loss of service or by unauthorized access. Detailed procedures for conducting the risk assessment are set forth in the NAVDAC Draft Security Manual. The risk assessment process is a detailed, encompassing procedure which is staff intensive

and is accomplished over a period of time. It is designed to accomplish the following:

- Identify and evaluate threats to ADP systems and to the ADP facility

- Identify and evaluate the importance of the ADP system and facility resources

- Estimate the Annual Loss Expectancy if a threat were realized

- Estimate the level of risk to which classified, sensitive or mission essential assets are exposed

- Identify those threats which could cause the greatest harm and recommend the most cost effective way to reduce or eliminate the threats.

The risk assessment looks at both threats and vulnerabilities. A threat comes from a source outside of the facility whereas a vulnerability is a weakness in the physical layout, organization, procedures, hardware or software of the data processing facility. An example of a threat evaluation form is provided at Exhibit IV-6. The risk assessment concerns itself with internal controls as well as security.

Both NARDACs we visited are finding the risk assessments a useful vehicle for assessing security and internal control. Both expect to change policy and procedures as a result of the risk assessment. Other security considerations are:

- Physical Access - Both NARDACs use electronically coded badges to which an electronic sensing device at the entrance to the Computer room reacts. The device at NARDAC Washington

EXHIBIT IV-6

Threat Evaluation Form

THREAT NAME	THREAT FREQUENCY	
	RATING (TABLE _-1)	PRECISION (TABLE _-2)
DESCRIPTION		
EXAMPLES & EVALUATION GUIDANCE		
IMPACT DESTRUCTION ☐ DISCLOSURE ☐ MODIFICATION ☐ DENIAL OF SERVICE ☐		
JUSTIFICATION		

Figure _-2

is programmed to take into account the time frame within which a person is entering the Computer room. A person on a particular shift can only enter the Computer room within a pre-established time frame. NARDAC Washington also has guards at the entrances to the building and alarmed doors. NARDAC Pensacola is working toward a greater restriction of entry into its facility and has closed circuit TV cameras at unguarded entrances and the Data Processing Center has alarmed doors.

- Environmental Considerations - Both NARDACs have air conditioning systems. NARDAC Pensacola has a second system for reserve air conditioning. NARDAC Washington has some backup capability. Both data processing centers have environmental monitors which measure temperature and humidity within the processing environment.

- Electricity - NARDAC Pensacola has backup capability in the form of an emergency diesel generator, but this generator cannot assume the full operating load in the case of power interruption. Some of NARDAC Washington's centers have backup electrical power and others do not. NAVDAC plans to include uninterruptable power supplies as part of its plans for the construction of new Data Processing Centers or the rehabilitation of the present centers.

- Passwords - Both NARDACs have passwords and, to some extent, utilize user ID numbers as part of a program for terminal security. System security varies with individual application.

- Fire Protection - Both NARDACs have fire protection. NARDAC Pensacola has an underfloor C02 system in the data processing center and a sprinker system in the tape library. Each

sprinker is individually activated by its own sensing device.

(2) Other Controls

In this section we present other internal controls operational at a NARDAC. We have attempted to determine when a procedure is standard practice for all NARDACs and when it is applicable only to the NARDACs we visited. However, this was not always possible. The following internal controls can be expected to be in place at NARDAC's (or are present at the NARDACs we visited):

- Acceptance Testing - All new applications are production tested to determine if they will run effectively in a NARDAC operating environment before being accepted. Standards for acceptance testing will be published shortly by NAVDAC. Plans call for all existing applications to be retroactively acceptance tested.

- Computer Resource Utilization - NARDACs are looking at applications for inefficient usage of computer resources. They are working with the various Central Design Agencies and NAVDAC to attempt to optimize the use of computer resources in the Navy.

- Librarian Function - Tape librarians are assigned and the Production Control Division tries to schedule a librarian on all shifts at NARDAC Pensacola. An automated tape library system is operational at Pensaocola, which controls the issuing of tapes for production runs. This system also maintains a perpetual inventory of tapes. Program documentation is maintained by the Acceptance Test/Recovery Division. At NARDAC Washington, the automated IBM scheduling system checks for the authority to use a tape for each

individual job, assures that the proper tape is used, and lists any I/O errors on that tape. This system also provides a tape inventory automatically.

- Testing - Testing is required as part of the system development effort and independently verified during acceptance testing. Test results are provided to the user, the Data Processing Installation Department and various NARDAC managers. Only personnel involved in the testing can access the test files unless an agreement with the user indicates otherwise. NARDAC Pensacola plans to use a test bed at NAVDAF Newport for testing to maintain a separation between testing and local production runs.

- Program Changes - At NARDAC Pensacola the Acceptance Test/Recovery Division identifies the needed fix for the immediate recovery of inoperable programs. In some cases, the application program developing organization applies program fixes. It is emphasized that computer operators do not perform program changes. The Acceptance Test/Recovery Division has teams assigned to each application program to apply fixes. This leads to more knowledgeable personnel who are diagnosing system problems. Production program files can be read by those who need to, but these files are locked so that only authorized personnel can modify the programs. At NARDAC Washington, the large volume of program maintenance activities has made control a difficult problem.

- Data Flow and Control - Exhibit IV-7 represents the processes of data flow and control at NARDAC Pensacola. Scheduling and quality control is independently performed which increases the control of the data processing operation. NARDACs are trying to eliminate their involvement in the data conversion process. Thus, the responsibility

NARDAC Pensacola Data Flow

	DATA CONVERSION	PRODUCTION CONTROL	DATA ENTRY	DATA PROCESSING	PRODUCT COMPLETION	PRODUCT DELIVERY
ON LINE	User	Production Control Division Teleprocessing Division • Schedule • System Setup	NARDAC Operations and Teleprocessing Divisions	NARDAC Operations Division	Production Control Division • Schedule Control • Quality Control	Production Control Division Teleprocessing Division • Teleprocessing
OFF LINE	NARDAC Moving Toward Complete Assumption of This Function by User. May be performed by contractor	Production Control Division • Schedule • Stage • Obtain Run Documentation	NARDAC Operations Division	NARDAC Operations Division	Production Control Division • Schedule Control • Quality Control	Production Control Division • Distribution

This chart illustrates responsibility for various functions as the data flows through the NARDAC

EXHIBIT IV-7

for the accuracy of data rests with the user and data conversion should be accomplished by the user or contract personnel. When a job is received, it must be integrated into the schedule. After scheduling, the job must be staged, based on run documentation and using the correct tapes. The production control group monitors the schedule and the progress of each job; they also provide quality control at the level of service specified and assure distribution or transmission of the application's products. The Teleprocessing Division monitors and controls the network during the processing described above. Scheduling is accomplished both manually and mechanically with current plans calling for a move to a completely mechanized system.

At NARDAC Washington, the IBM group has an automated IBM scheduling system. Schedules are prepared in advance based on inputed requirements. On the morning the job is to be run, notification is transmitted to the user. The user may change the jobs within the framework of the time and processing resources available. The automated system tells the operations personnel the setup needed for the job including the tapes required. During the day, the system provides indications of the time available before the job is to be run and records what jobs are run. This type of scheuling system can be used to analyze production problems.

- Backup - NARDACs are entering into backup agreements with other NARDACs and other data processing centers. However, due to various constraints and regulations, excess capacity is not readiliy available and the use of another data processing center's capacity will obviously degrade that center's ability to provide the normal level of service to its customers. Priorities for service need to be assessed and instituted. NARDAC Washington has backup agreements

with other government agencies' data processing centers in the Washington area.

- Performance Measurement/Utilization - Although NARDACs have computer utilization figures, such statistics do not have the importance that performance measurements, which are customer oriented, would have. The Liaison/Planning Officer is responsible for working to develop such measurements with users. NARDAC Washington uses its automated scheduling system to analyze operating results which includes computer downtime. Reports of CPU useage are provided to users and in some cases, these reports include dollar costs which indicate the charges a user would pay if the work were reimburseable.

- Preventive Maintenance - Preventive maintenance varies by contractor and equipment.

- Training - There are three levels of training grades within a NARDAC. Individual Training Plans are developed and cross training, on the job training, schools and self-study programs are the methods of accomplishing required training.

- Personnel - Regulations for the administration of personnel are affected by agreements between unions and the data processing centers. Some NARDACs operate under the personnel management policies and regulations of the Naval Station or Naval Air Station on which they are physically located. At NARDAC Washington, personnel rotate duties and, when reasonable, rotate among sites. Overtime is closely regulated. In general, it appears that civil service rules and employment stability tend to lessen the rotation of duties among NARDAC personnel.

- Teleprocessing Network Configuration - An up-to-date configuration documentation of the teleprocessing network is available to operating personnel at NARDAC, Pensacola. This document assists in the troubleshooting process.

- Standards - NARDACs operate under the following standards:

  - Automated Data Systems Documentation Standard (Department of Defense - DOD Instruction 7936.1)

  - Security Requirements for Automated Data Processing Systems (DOD Instruction 5200.28)

  - ADP Security Manual - Techniques for Implementing, Deactivating, Testing and Evaluating Secure Resource - Sharing ADP Systems (DOD Manual 5200.28M)

  - Personnel Privacy and Rights of Individuals Regarding their Personal Records (Secretary of the Navy - SECNAV Instruction 5211.5)

  - Department of the Navy Automatic Data Processing Program (SECNAV Instruction 5230.4)

  - Safeguarding Personal Information in Automated Data Systems. Includes Federal Information Processing Standard (FIPS) 41 on the same subject (SECNAV 5239.1)

  - Continuity of Operations Policies and Planning (Chief of Naval Operations - OPNAV Instruction 3050.18)

  - Communications Security (OPNAV Instruction 2200.13)

  - Automated Data System Development; Procedures for the Management of (OPNAV Instruction 5231.1)

- U. S. Navy Physical Security Manual (OPNAV Instruction 5510.45)

- DOD Industrial Security Program (OPNAV Instruction 5540.8)

- Security of Federal Automated Information Systems (OMB Circular No. A-71)

- Guidelines for ADP Physical Security and Risk Management (FIPS Pub 31)

- Evaluation of Techniques for Automated Personal dentification (FIPS Pub 48)

- Guidelines for Automatic Data Processing Risk Analysis (FIPS Pub 65).

. Reports - Activity reports are sent to the user in order to determine if there has been unauthorized activity within the applications or the system files.

V. SYSTEMS SURVEYS

This chapter summarizes the information obtained on distributed systems identified by the Naval Data Automation Command for possible further review during our field work. The Naval Data Automation Command was the primary source of the information but supplemental information was obtained from functional managers when needed to complete the survey.

Our objective was to review Navy developing distributed systems for certain characteristics which we felt would provide the most benefit to our research effort. We were interested in reviewing systems which had significant qualities of distributed systems, systems with overall Navy application, and systems which were in an advanced stage of development.

The candidate systems identified by the Naval Data Automation Command were:

- Integrated Disbursing and Accounting (IDA)
- Shipboard Non-Tactical ADP Program (SNAP)
- Pay and Personnel Administrative Support System Phase II (Source Data System) (PASS Phase II [SDS])
- Engineering Field Division Management Information System (EFD/MIS)
- Public Works Center Management Information System (PWC/MIS)

- System Stock Point Logistics Integrated Communications Environment (SPLICE)

- Naval Aviation Logistics Command Management Information System (NALCOMIS)

In the remainder of this chapter we discuss the types of information obtained on the systems surveyed and briefly discuss the two systems selected for further review. We have divided our discussion into the following sections:

- System Information Obtained

- Systems Selected.

Each topic is presented below.

1. SYSTEM INFORMATION OBTAINED

In order to evaluate the distributed systems under development within the Navy, survey information was obtained on each system identified as a distributed system by the Naval Data Automation Command. Our purpose in obtaining this informtion was to select for further study systems which best fit our project objectives.

Below we present the types of information we obtained on each system and a brief explanation of each category.

- Type of System

  A brief description of the principal type of data which the system processes, e.g., financial, logistical, supply, informational, etc. The type of data processed is indicative of the level of internal control needed.

- System Description and Objectives

  This category briefly states the basic purpose of the system and describes the system and its distributed characteristics.

- System Status

  This item indicates the development status of the system in terms of life cycle management stages of development. A graphic overview of the development status of the systems reviewed is provided by Exhibit V-1.

- Design Agency

  Here we identify the agency which is designing the system or the agency performing the duties of a functional manager, that is managing other organizations responsible for the system design.

- User Agency

  Here we identify the agency or the agencies which will receive the products of the data processing system under development.

- Location of Demonstration Site

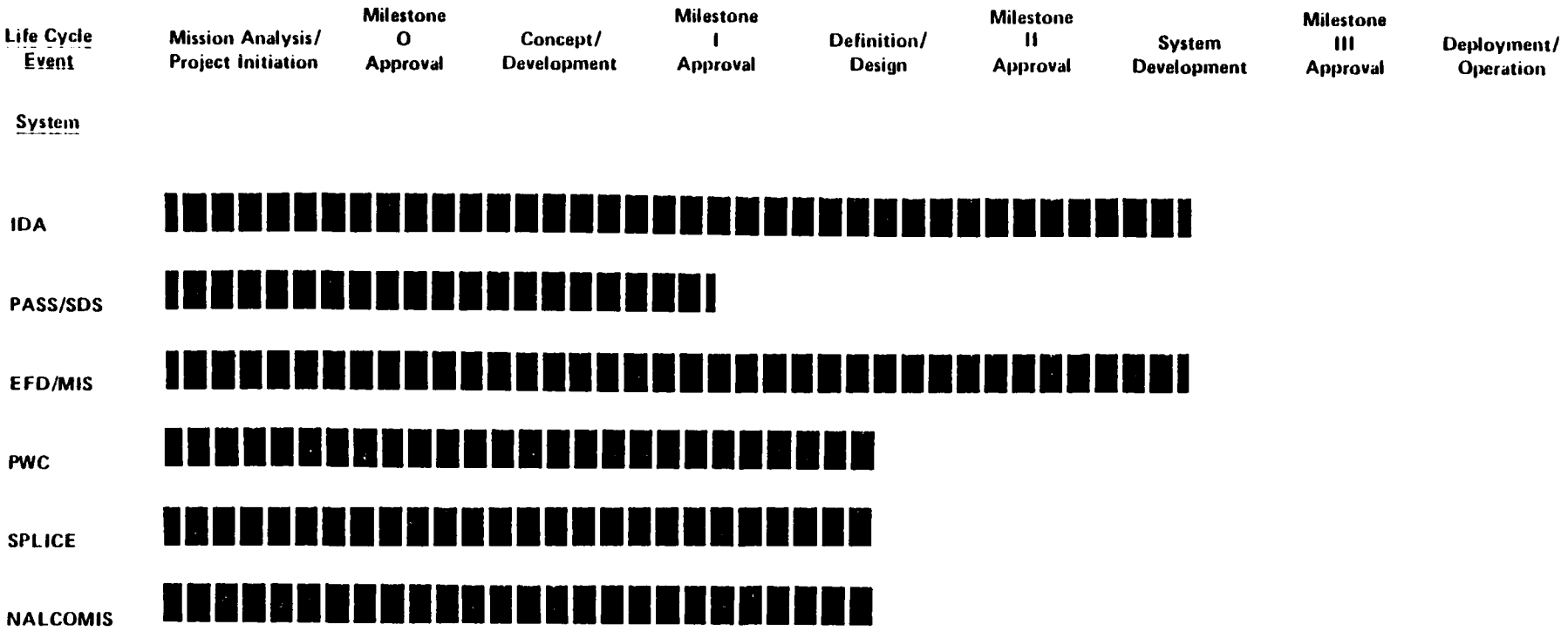
  This item identifies the command and physical location of the systems under review.

- Documentation Available

  Any pertinent documentation available at the Naval Data Automation Command is listed under this caption.

The information obtained from the Naval Data Automation Command was considered to be an adequate survey of non-tactical distributed systems under development in the Navy. No systems which were operational were identified as can be seen from a review of Exhibit V-1. The Detail results of our initial survey are presented in Appendix C of this volume of our report. The categories of information previously described are presented for each of the seven systems we considered for further review. In the next section we briefly discuss the system we selected for a more in-depth review.

Development Status of Navy Distributed Systems



NOTE: SNAP not included as it is a procurement of computers which will emulate the computers presently in place.

EXHIBIT V-1

2. SYSTEMS SELECTED

After completing our survey at candidate systems, we selected IDA and PASS Phase II/SDS for a more in-depth review. The objectives of our review were to develop an understanding of the flow of data through these systems and to identify key control points within the systems. The details of our review of these systems are presented in Appendices A & B of this report. In the remainder of this chapter we briefly discuss these two systems.

- Integrated Disbursing and Accounting/Financial Management System IDA/FMS

  We selected IDA/FMS because it was a system which was well advanced in the system life cycle process. With an operational IDA system developed at CNET, it was possible to develop an accurate, complete understanding of the system characteristics and discuss system operations with IDA/FMS designers, system users and data processing center operators who had actual experience with the system. The IDA concept utilizes regional financial information processing centers which provide both accounting and disbursing services to financial regions. These regional centers will eventually be linked to each other and to a central accounting and finance office using a telecommunications network. The IDA System we reviewed, was called IDA/FMS. The FMS portion of the system was developed within CNET several years ago and the IDA portion added in 1977. The completed package is known as IDA/FMS and is the accounting system of the future for the Navy. The Comptroller of the Navy has partially certified the system and plans call for IDA/FMS to be exported to other regions within the Navy. For this reason

we chose IDA/FMS as representative of the type of Financial System the Navy will have in the future.

PASS PHASE II/SDS

PASS Phase II/SDS is designed to automate the overall Navy Military personnel and pay management information system and to improve the quality and timeliness of management information. Although the PASS Phase II/SDS system is in an early stage of system development, it was considered a significantly advanced system with an interfacing capability with two headquarters data bases. Since there is presently no PASS Phase II/SDS system operating, the discussion of this system is based on information obtained from the PASS project office personnel. We can not discuss specific operational controls at a detailed level but only mention the plans of the project team.

PASS Phase II is a distributed data processing system with distributed data bases. PASS field offices will have terminals linked to field host processors at Data Processing Centers. These field host processors will maintain pay and personnel data bases and interact with the MAPTIS and JUMPS system through headquarters Host Processors. The system will utilize an extensive telecommunications network and features two way updating. File transactions will flow from the field offices upward as well as from Headquarters down.

The review of PASS Phase II/SDS and IDA/FMS has been most useful to our project team. Although we have not audited these systems, we have gained a level of understanding regarding the system features and the flow of data through these systems. With both system being relatively young in terms of the life cycle of a system, it has provided us with the opportunity to understand how Navy Systems are developed, as well as providing an overview of specific systems.

Chapter [illegible]

Observations and Conclusions

VI. OBSERVATIONS AND CONCLUSIONS

The purpose of this chapter of our report is to present our observations and conclusions relative to the Navy's ADP environment. The discussions contained in this chapter are a compilation of information we have gathered during Task 2 of our project. The remainder of this chapter, we present a summarizes our observations and conclusions.

1. OBSERVATIONS

The observations presented below are related to the Navy's existing ADP environment and related internal controls. The items outlined below have a significant impact on general internal controls in an advanced systems environment.

- The Navy's System Development Process Provides a Well Controlled, Managable Procedure for Developing ADP Systems.

  Controls over the system development process are necessary for several reasons. Obviously, a controlled system development effort is easier to manage and evaluate. The management aspects include budgetary and schedule compliance. Another benefit is the ability to review and institute needed controls in the system being developed. A sound system development process provides this opportunity. Finally, a good system development process provides for adequate testing of an application's controls prior to implementation. These aspects of system development control increase the reliability of the system and lead to better application systems.

We have reviewed the Navy's AIS development process and discuss certain aspects of it in more detail in Chapter III of this volume. In general, we believe the system development process utilized in the Navy provides the general benefits previously described in this section. The opportunity to control and management system development, the ability to assure adequate system controls and the opportunity to evaluate system design and testing are all present in the Navy's AIS development process.

NAVDAC's Initiatives in the Area of the ADP Security Manual and the ADP Inspection Guide are Positive Steps Towards a Well-Controlled ADP Operating Environment.

The Navy's ADP Security Manaual is designed to establish the Navy's security program for ADP systems and to serve as a management tool by consolidating pertinent Navy ADP security information. It contains policies, responsibilities, and procedures for Navywide, Command, and Activity ADP security programs and provides guidance for those charged with implementing policies and procedures. The manual is also designed to provide guidance in developing and applying cost-effective security measures related to ADP systems and data.

The NAVDAC Inspector General is preparing an ADP inspection guide. This guide incorporates requirements from various instructions and publications and integrates them into one document. This inspection guide also includes the GAO Audit Guide requirements for ADP systems.

These initiatives are significant undertakings and should

increase the level of security awareness in the Navy's ADP environment. Guidance in the area of security comes from multiple sources in the Federal Government and efforts to consolidate and explain responsibilities benefit the entire Navy. Security is an important aspect of the system of internal controls and these NAVDAC efforts have a positive impact on all aspects of the Navy's ADP operations.

The Standard NARDAC Organization Provides a Well-Controlled Operating Environment.

Controls in the operation of computer centers are needed to compliment the controls placed in specific application systems. General controls should operate in the computer center to assure the reliability of hardware equipment, and the availability of files and application programs to perform daily processing.

We have discussed the NARDAC operating environment with representatives of two NARDAC organizations. The procedural and organizational controls necessary to assure a controlled operating environment are supported by the individuals we met. The changes necessary to support such an operating environment are in the process of being instituted at the NARDAC facilities. We realize this is an evolutionary process which requires time and a sustained effort. The resources required to improve the NARDACs have been provided and the effort appears to be well underway. We hope the enthusiasm and dedication to this reorganization is shared by all NARDACs throughout the Navy. The development of well organized, controlled processing centers should increase user, designer, and management confidence in the Navy's ADP processing capability.

- The Institution of a Test and Acceptance Group and the Levels of Service Concept will Define Responsibilities in the ADP Systems Area and Permit Operating Standards to be Enforced.

Under the present operating concept, NARDACs have provided ADP processing for user activities regardless of the quality of the application. A feature of the new NARDAC organizational structure will be a test and acceptance group. This group will provide an independent evaluation of user applications and determine if applications will operate successfully in the NARDAC environment. This independent performance review provides the computer processing center an opportunity to reject applications which are poorly designed, consume excessive CPU time, and burden processing center operations.

Another related concept planned for the NARDAC operating environment is the levels of service concept. Under this method, users are provided with options as to what services and what grade of service they wish to receive from the NARDAC. Responsibilities are accepted by the user or assigned to the NARDAC. This methodology allows NARDAC personnel to explain the range of services available and users must accept responsibility for the aspects of the system he chooses to retain.

The combination of these two concepts will provide several improvements in the operational aspects of Navy ADP systems. Application performance will be evaluated by the processing center. Responsibility for various aspects of system design and operation will be more clearly defined. Computer center performance can be effectively measured. All of these

inhancements should increase the quality and operational efficiency of Navy ADP systems.

- The Risk Assessment Should Provide Increased Awareness in the Area ADP Security and Lead to a More Controlled Environment.

As required by NAVDAC, NARDACs are currently in the process of performing risk assessments. The risk assessment is a systematic approach to making security decisions. This analysis includes identification of system components or functions which have weaknesses, analysis of potential threats to the system, identification of countermeasures and the cost-effectiveness of these countermeasures, and the identification of residual vulnerabilities.

The performance of a risk assessment is time consuming and requires the dedication of human resources. However, the results of such an analysis provide increased awareness of the security aspects of data processing operations and identify the most cost effective methods of dealing with exposures. This analysis is valuable and provides an opportunity to improve security consciousness among all data processing center personnel.

- Due to the Nature of the Navy Environment There Should be Central Guidance Related to Internal Controls Available to System Design Agencies.

When developing our system descriptions of Navy distributed systems, we were interested in what sources the design agencies were utilizing in determing what internal control features would be placed in the systems. There were a variety of sources presented and the system of internal controls

built into the systems we reviewed appear to be adequate, but no central source of guidance was consistently named. We feel that the Navy should develop a source for internal control guidance. Obviously, no one set of internal controls can or should be built into every operating system. However, a central source could provide general internal control guidance to system designers, discuss alternative available in various system control aspects, and outline the system features and data characteristics which impact the need for specific controls. This central guidance should increase the quality of overall Navy systems and fix the responsibility for maintaining up-to-date guidelines for system developers to reference.

The Navy ADP System Development Process Should Be Supported by Increased Audit Service Involvement in the System Development Process

In the system development process, which all major Navy ADP systems must follow, there are several stages where the Naval Audit Service should be involved. Involvement is defined in terms of providing service to management in a consultant role. The exposure necessary to provide this sevice could be included in the Navy's ADP security manual. We reviewed a draft copy of this manual which had a small section on the Audit Service and it's responsibility to "ensure the system will be auditable" during system design. This requirement to respond to the system designer during the system concept design is an opportunity the Audit Service should exploit. The Audit Service should provide an auditor to the system designer who is knowledgeable concerning system development with the idea of emphasizing internal controls in an ADP system as a management tool as well as an auditability feature. By involving the auditor at this

early phase of system development, constructive input can be provided. This will not only enhance the quality of the ultimate system, but increase the esteem of the Audit Service with the system design agency.

- The Audit Service Should Write the Section on the Naval Audit Service for the ADP Security Manual

The Audit Service should identify it's mission and capabilities in the ADP Security Manual. This document, with its wide circulation, provides the Audit Service an opportunity to discuss not only audit requirements but internal controls in general. The Audit Service may wish to expanded this section of the Security Manual to include a brief discussion of the concept of internal controls and the increased need for awareness in the design of advanced ADP systems.

The chapter as presently written discussed audit trails, system auditiability, audit requirements, audit review, audit controls, and audit testing. These items are not defined and may lead to confusion among system designers who are data processing oriented, not audit professionals. We recommend the Audit Service participate in the development of the ADP Security Manual and clearly identify it's purpose in participating in the system development process.

2. CONCLUSIONS

As previously stated, Task 2 was designed to guide our research efforts in order to provide the Navy with the most useful product. It was imperative that we understand the direction the Navy was headed in order to properly direct our research efforts. The conclusions which follow identify areas of emphasis which will influence our

efforts during Tasks 4 and 5 of our field work. In the remainder of this chapter, we presents our conclusions and briefly discuss each item.

- Developing Navy Systems will Change the Nature of Traditional Audit Approaches

  Our research related to advanced EDP systems has made this point very clear. Traditional audit approaches will not be sufficient in a distributed environment. The distribution of data, input capability and the utilization of communications links require a modification to the traditional audit approach. Distributed systems place an increased emphasis on audit capability being provided for in the system's design and the traditional audit approach must be modified.

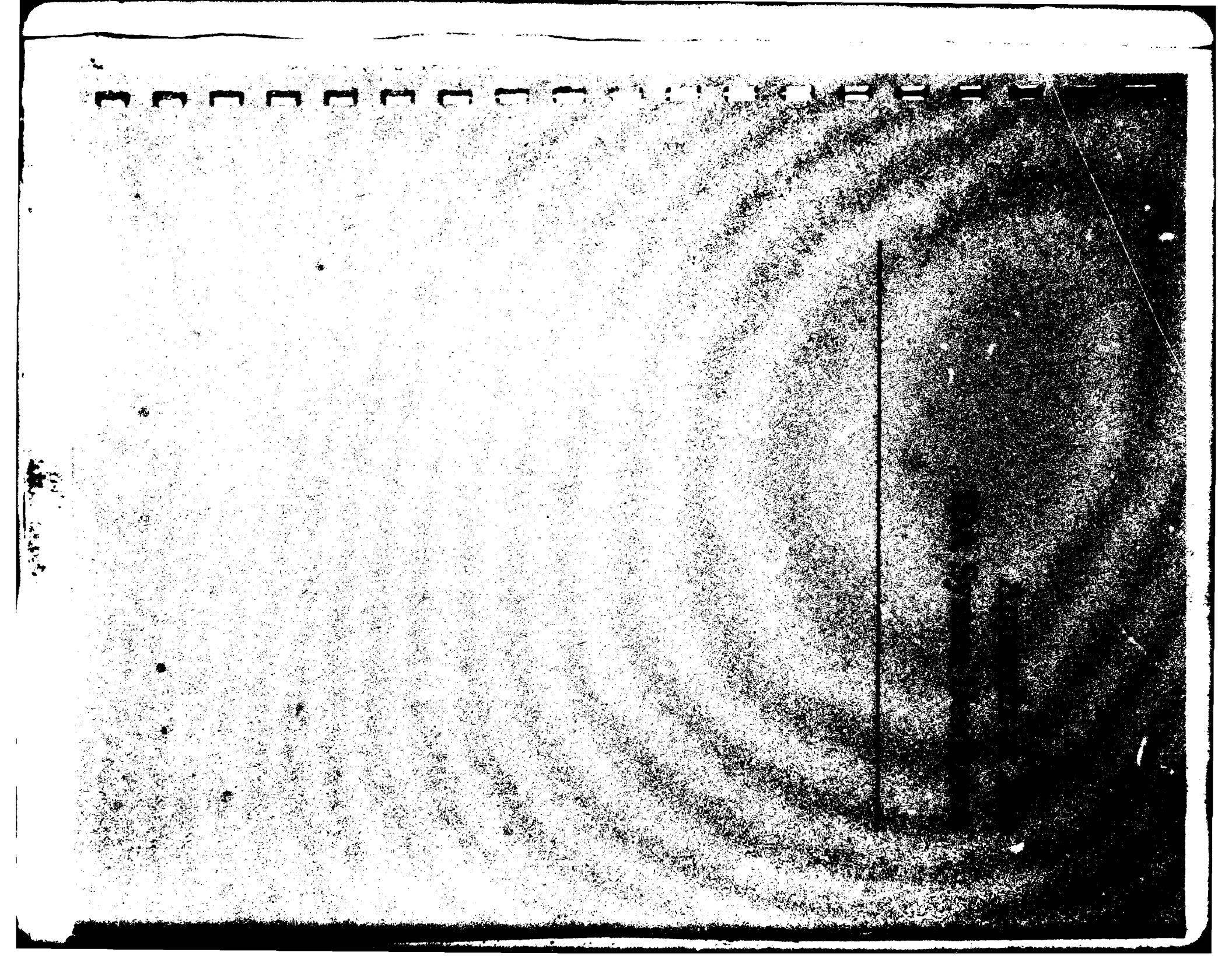
- There is a Greater Need for Audit Involvement in the System Development Process

  One of our observations presented in Volume 2 of this report relates to the increased significance of the system design phase in distributed systems. The analysis performed during this phase must adequately address the desirability of individual internal controls. System design should not only incude this evaluation of internal controls but also identify the features needed to facilitate the verification of such controls. Thus system auditability is an important aspect of the design of application systems and increased audit involvement is required. In order for such involvement to be successful the auditor must understand the system development process and be capable of conveying audit objectives in terms data processing professionals can understand.

- Continuing Project Efforts will Emphasize the Impact of Distributed Systems on the Navy's Developing EDP Environment and How the Audit Service can Best Serve the Navy in This Situation

Our knowledge of Navy ADP operations, types of systems being developed and Naval Audit Service practices and procedures will significantly influence our remaining project efforts. We will be able to evaluate the applicability of our recommendatons with sufficient understanding of where the Navy presently stands and where it appears to be headed. This insight will temper our analysis and provide necessary guidance.

Our future efforts will not focus on individual Navy applications but the developing environment at advanced EDP systems. Emphasis will be placed on the Auditor's approach and auditing techniques which are most effective in this technologically advanced environment.



INTEGRATED DISBURSING AND ACCOUNTING SYSTEM
(IDA)
SYSTEM DESCRIPTION

The purpose of this system description is to present our understanding of the Navy's Integrated Disbursing and Accounting Financial Management System (IDA/FMS) developed by the Naval Education and Training Command (CNET) at the Naval Air Station in Pensacola, Florida. The IDA concept, developed by the Navy Comptroller's Office, has as its primary objective to integrate the disbursing and accounting functions while improving the timeliness and accuracy of financial information for Navy managers. The Office of the Comptroller of the Navy has issued a general design document for the IDA concept. The purpose of this general design is to provide guidelines and standards for the overall processing network for the internal and external flow of financial data. A detailed design manual was also developed by NAVCOMPT to state the Navy's objectives, policies, guidelines principles and standards for the design, development and implementation of a financial processing network for internal and external data flow. Based on these two documents, operating level systems are to be developed. One of these operating level systems is the Naval Education and Training Integrated Disbursing and Accounting Financial Management System (IDA/FMS). In order to facilitate our description of this system, we have divided our discussion into the following categories:

- Background and System Overview
- System Documentation and Users Manual

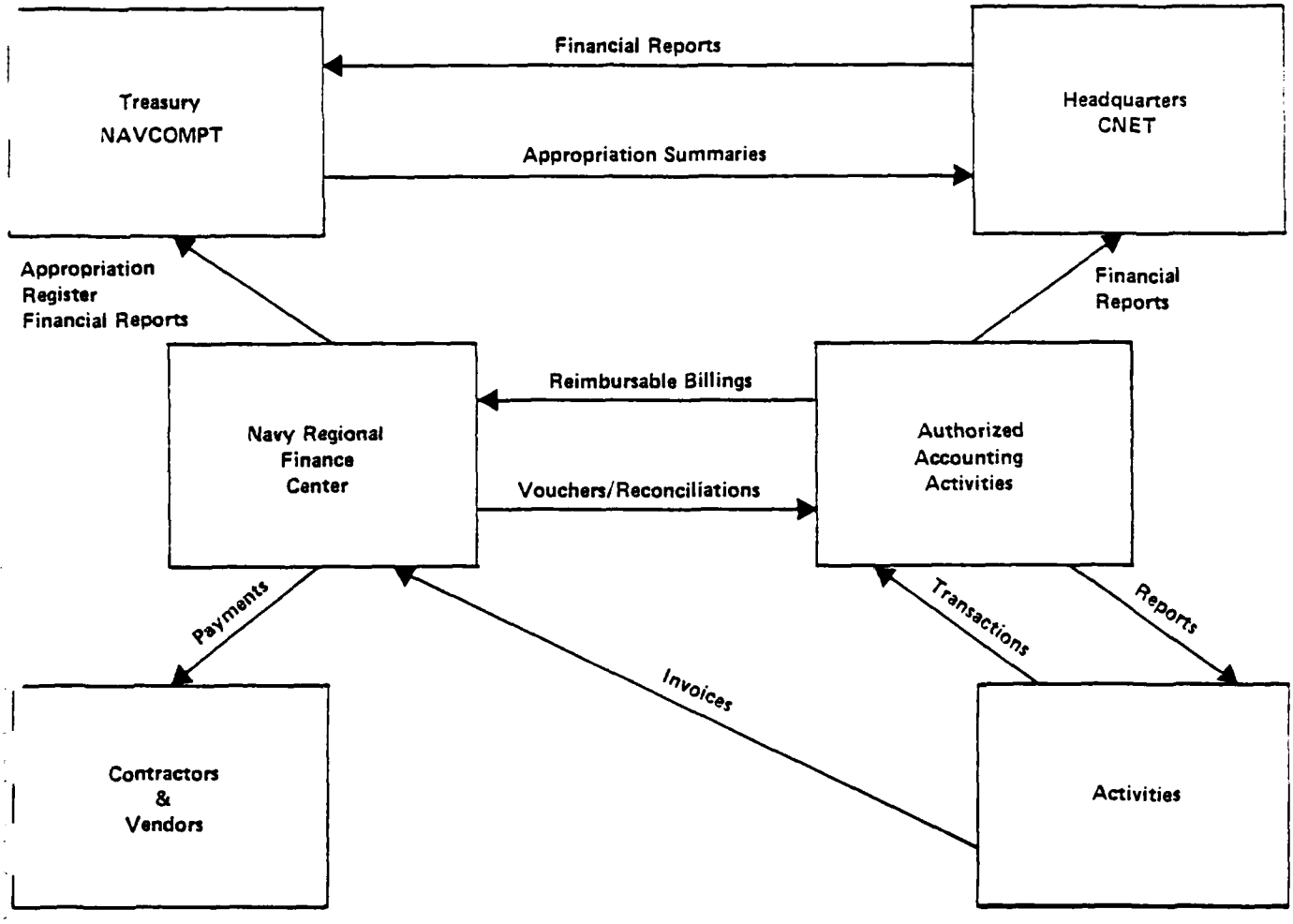
- Source Document and Input Preparation
- Data Conversion
- System Interfaces
- System Edits
- Error Corrections
- Data Base
- System Reporting and Inquiry Capabilities
- Data Reconciliations.

A discussion of each subject is presented below.

1. BACKGROUND AND SYSTEM OVERVIEW

The Navy's present disbursing and accounting systems evolved from the World War II period. The disbursing function was established as a separate system in order to provide prompt payment to contractors for goods and services rendered to support the war effort. This system has not changed since that time. The Navy's official accounting function has traditionally been performed by Authorization Accounting Activities (AAAs). Within the Navy there are over 250 AAAs responsible for maintaining official accounting records for approximately 1300 Navy operating budget holders or fund administering activities. Exhibit A-1 which follows this page illustrates the present flow of financial information within this structure. Although this system has met the external reporting requirements imposed on the Navy, the physical and organizational separation of the disbursing and accounting functions has precluded the financial system from meeting

Flow of Financial Data Prior to IDA



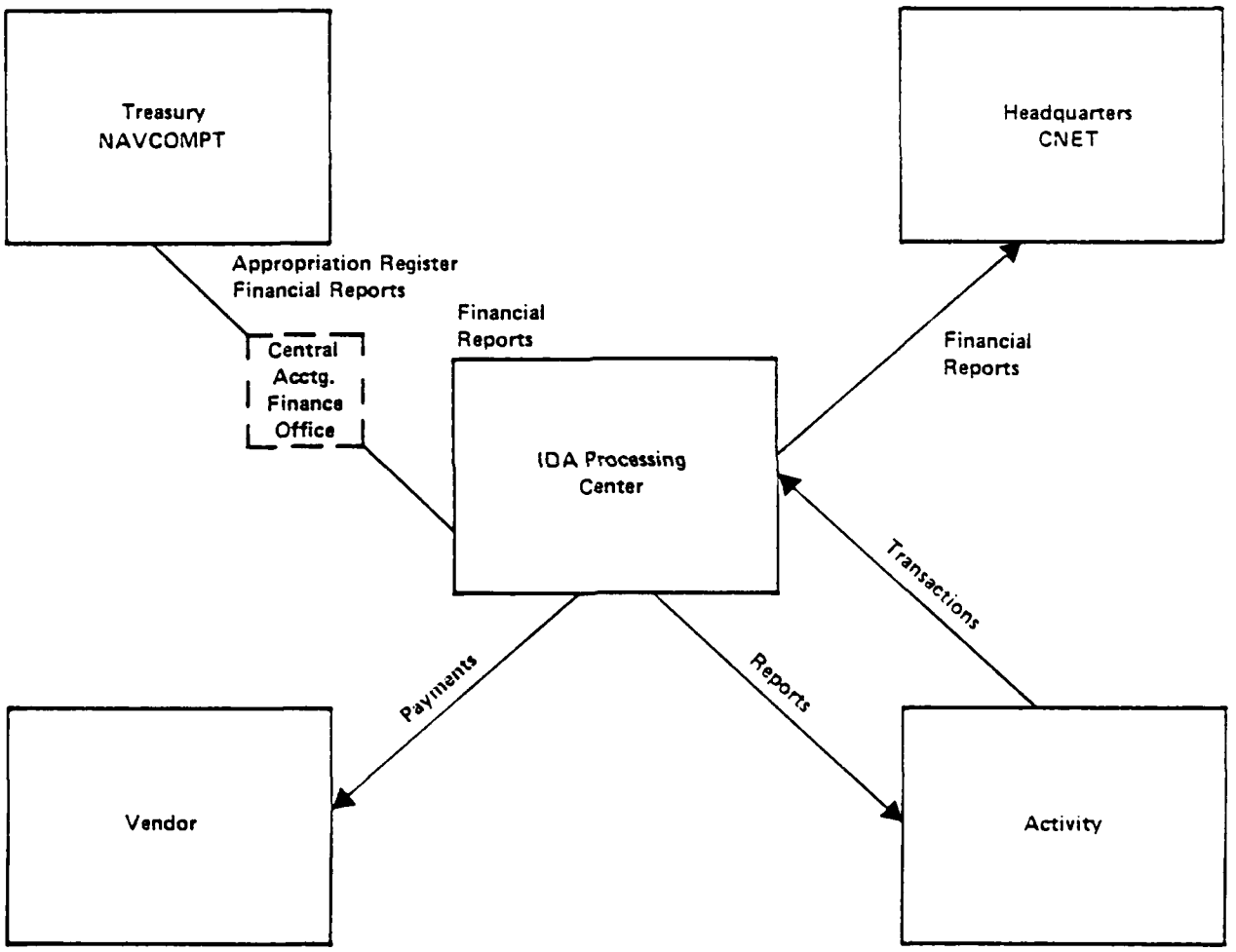
the informational requirements of Navy managers. This system has also resulted in numerous other deficiencies in the accounting and disbursing processes in the Navy. A summary of these deficiencies is presented in the following listing:

- Multiple recording of the same detailed data at disbursing, accounting and operating activities
- Untimely Financial Data
- High support cost associated with the preparation, transmission and processing of hard copy documentation
- Multiple reconciliation of both disbursing and accounting data
- Excessive balance of undistributed disbursements.

The IDA concept utilizes regional financial information processing centers which provide both accounting and disbursing services to financial regions. These regional centers will eventually be linked to each other and to a central accounting and finance office using a telecommunications network. The financial processing centers are linked to local activities via Cathode Ray Tube (CRT) terminals to provide on-line inquiry and to update files where appropriate. This networking, illustrated in Exhibit A-2, provides the following benefits:

- One Time Data Capture - Under the IDA concept, data is inputted to the system via remote terminal devices. The source documents associated with this input are retained at the input stations, thus eliminating the transmissions of hard-copy accounting documents.

Flow of Financial Data Under IDA Concept



- Establishment of a Single Document File (Data Base) - The IDA data base provides many advantages during processing as well as on-line inquiry capability. A complete description of the Data Base and a discussion of its advantages is presented in a subsequent section of this system description.

- Maximum Utilization of Teleprocessing and ADP Capabilities - The IDA system provides improved utilization of ADP capabilities and increases the quality of output for users, other systems and higher management. The benefits in this area are mentioned throughout the system description.

- Automation of the Payment Certificate Process - The IDA system automates, to the maximum extent possible, the payment certification process presently manually performed.

- Improved Financial Management Reporting to Local and Higher Levels of Management.

An overview of the IDA/FMS system is presented in Exhibit A-3.

As the flowchart in Exhibit A-3 shows, the IDA/FMS system consists of two major processing cycles, the IDA module and the FMS module. The IDA module includes the following proceses:

- Batch Balancing

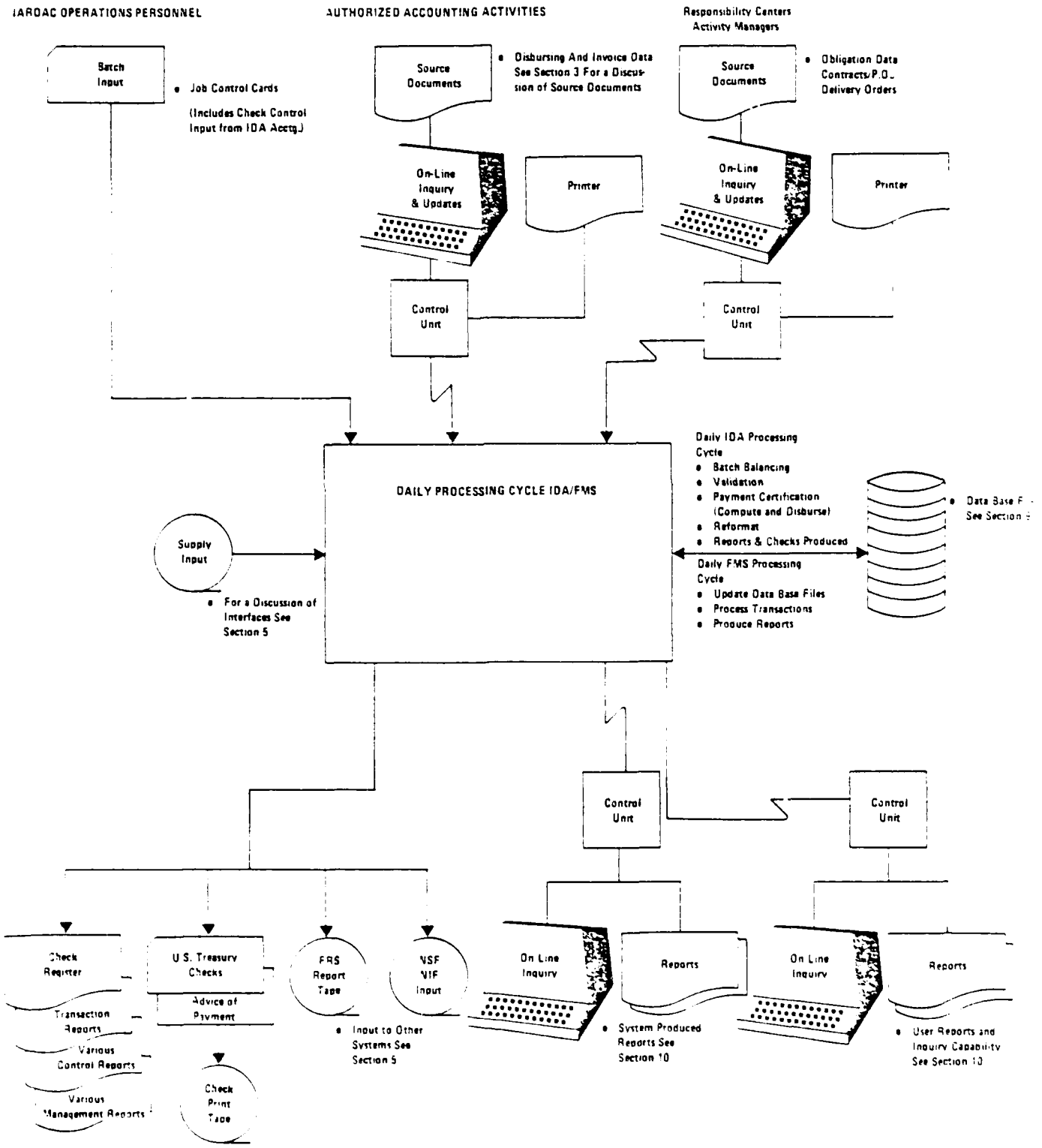
- Edit/Validation

- Payment Certification

- Reformat and Update

Integrated Disbursing and Accounting
CNET Version
System Overview Flowchart

EXHIBIT A-3



- Disbursing.

The accounting module (FMS), which utilizes files produced during the IDA module, includes:

- Updating of accounting ledgers and other files
- Storage of Details
- Production of various reports and journals.

The two basic processing steps in the IDA module are the payment certification process and the disbursing process. All input data is batch balanced and subject to extensive machine edits prior to processing. IDA outputs include reports for controlling input data, transactions for updating accounting records and management reports for local and higher management. The IDA data base permits on-line inquiry capability to selected data elements to provide current status of commercial contracts and invoices, the major items processed are dealer invoices and travel vouchers for payment. The IDA concept was developed based on the fundamental concepts promulgated in NAVSO P-3583. The FMS section of the system utilizes files updated during the IDA processing and input provided by the supply system. FMS basically updates accounting ledgers, stores details and produces various reports and journals. The resulting system, IDA/FMS, has successfully integrated the disbursing and accounting functions.

The IDA/FMS system was developed to operate on an IBM 360/65 located at NARDAC Pensacola with CRTs and printers located in the users offices which IDA/FMS supports. The IDA/FMS system operates daily and provides output data for other accounting systems in a card or tape format. This IDA/FMS development effort has been reviewed and approved by the Comptroller of the Navy who coinitiated the effort with CNET in April of 1976. Although future plans call for the addition

of minicomputer to the system this capability does not presently exist. This system description is based on the current system configuration and equipment presently in place.

2. SYSTEM DOCUMENTATION AND USERS MANUALS

We have reviewed several documents specifically developed for the IDA/FMS system at Pensacola. This documentation is believed to be complete and accurate and provides a good understanding of the IDA/FMS system. The documentation was well indexed, easy to understand, and contained graphics and tables to facilitate understanding. The documentation listed below was reviewed.

Title	Document Numbers	Date
IDA/Functional Description	NAS P-104 FD-01	1-Dec 76
IDA/Users Manual	NAS P-104 UM-01	1 Oct 77
IDA/System/Subsystem Specification	68142-E80 SS-01	1 Oct 77
IDA/Data Base Specifications	68546-E80 DS-01	1 Oct 77
IDA/Data Requirements Document	68142-E80 RD-01	1 June 77
IDA/Computer Operation Manual	68540-E80 OM-01	1 Oct 77
FMS/Functional Description	NETISA 00062-90 FD01	31 Mar 76
FMS/IDA CRT Users Guide	00062-090 UG-013	9 Feb 79

3. SOURCE DOCUMENTS AND INPUT PREPARATION

The purpose of this section is to identify the source documents and Input Preparation Activities associated with the IDA/FMS system. There are six basic classifications for source documents utilized by the IDA module. They are:

- Auxiliary Appropriation Data
- Contractor Information and Status Data
- Check Register Data
- Parameter Data
- Obligation Data
- Payment Data.

Each of these input types is discussed below.

- Auxiliary Appropriation Data

  Appropriation Data is required for all appropriations other than CNET accounted for by AAA 68566. This data is required for each expenditure processed and must be inputted upon receipt of the obligating documents if the appropriation has not previously been established on the system. The NETFIPC IDA Branch is responsible for the updating of the appropriation file based on the accounting classification cited on the obligation document. Obligation documents are discussed under a subsequent heading in this section. The information is established by the use of the CRT for on-line updates.

- Contractor Information and Status Data

  Contractor information and status is required for obtaining the proper name and address for each check produced by the IDA system. The contractor status is a system feature which prevents payments to a contractor who is bankrupt or indebted

to the U.S. Government. The NETFIPC branch also inputs Contractor Information data using the CRT for on-line updates.

- Obligation Data

Obligation data is input daily by the Comptroller of each customer activity and by the AAA technicians at NETFIPC for activities whose data volume does not warrant the use of a terminal. The AAA 68566 obligation data is input via CRTs, while satellite activities utilize similar equipment for their input. A listing of source documents and their form numbers are presented in Exhibit A-4. The system will reject this input unless the contractor data and appropriation data previously discussed in this section has already been established on the system.

- Payment Data

Payment input is required to record all invoices, travel advances/liquidations, collections, refunds, adjustments and reimbursable billing for which expenditures must be processed. Transactions which require disbursement of funds will result in the production of system produced checks if the obligation data previously discussed has been established on the system. The CNET NETFIPC Branch is responsible for processing this input, which is input via CRTs. Preparation is daily upon the receipt of check or cash for collections and refunds, receipt of travel advances/liquidations, receipt of reimbursable billing and receipt of adjustment transactions. All payment input details must be preceded by a batch header.

- Parameter Data

LIST OF SOURCE DOCUMENTS FOR IDA FMS INPUTS

Title of Document	Form No.
Award/Contract	SF 26
Purchase Order	DD 1155, SF 44
TDY Travel of DOD Personnel; Request and Authorization for	DD 1610
Architect - Engineer Fixed-Price Contract	SF 23
Shipping Document; Requisition and Invoice	DD 1149
Project Order	NC 2053
Accounting Data; Summary of	NC 2035
DOD Printing Requisition Order	DD 282
Contractual Procurement; Request for	NC 2038
DOD Civilian Permanent Duty Travel; Request and Authorization for	DD 1614
TAD Travel Order	NAVPERS 1230/16
Work Request	NC140
Contract Amendment, Modification	SF 30
Standard Transfer Order	NC 536
Contract Form	SF 33
Expenditures on Official Business; Claim for Reimbursement for	SF 1164
Single Line Item Requisition	DD 1348
Reimbursable Work Orders	Various
Blanket Purchase Agreement Call	Various
Military Interdepartmental Purchase Request (MIPR)	DD 448-2
Infuels Into-plan Contract Sales Slip	DD 1898

LIST OF SOURCE DOCUMENTS FOR IDA FMS INPUTS (Continued)

Title of Document	Form No.
Fuels Issue/Defuel Contract Slip	AF 1994
Transfer Between Appropriations and/or Funds	SF-1080
Navy Bill	NC-252
Cash Collection Voucher	DD 1311
Travel Voucher, sub-voucher	DD 1351
Reimbursement voucher	SF 1129a
Public Vouchers	Various (SF 1034)
Disbursing Officer Vouchers (DOVs)	Various
Vendors Invoices (Dealer's Bills)	Various
Shipment and Performance Notice (SPN)	Various
Labor Distribution Card	Various
Contractors Request for Progress Payments	Various (DD 1195) (DD 548)
Resources Authorization	NAVCOMPT 2168-1
Allotment/sub-Allotment Authorization	NAVCOMPT 372
Funded Reimbursable Work Estimate	NAVCOMPT 2044
Material Inspection and Receiving Report	DD 250
Initiation, Bid & Award	SF 19
Continuation Sheet	SF 36
Withdrawals and Credits; Voucher and Schedule of	SF 1081
Schedule of Voucher Deductions	SF 1096
Correction Notice	NAVCOMPT 621

LIST OF SOURCE DOCUMENTS FOR IDA FMS INPUTS (Continued)

Title of Document	Form No.
Expenditure Cards	NAVCOMPT 632
Expenditures/Collections; Listing of	NAVCOMPT 634
Labor Roll/Material Charges & Credits	NAVCOMPT 2051
Fund Authorization Charges	NAVCOMPT 2074
Military Service Report	NAVCOMPT 2182
Schedule of Cancelled Checks	SF 1098
Advice of Payment	DSA 477
Procurement Document Transmittal	NAVSUP 631
Labor Job Time Card	NAVDOCKS 1950
	NAVCOMPT 7000 Series

Parameter card data is required to control the check numbers issued by the system. The CNET NETFIPC branch prepares the parameter card data on a preprinted form which will then be punched by the NARDAC I/O control group.

- Miscellaneous Labor and Work Unit Data

  Biweekly information concerning labor adjustments and work units is provided to the IDA/FMS system. This information is needed to produce accurate management reports regarding public works projects.

There is additional input data required for the Financial Management portion of the IDA/FMS system. This data is gathered in the Uniform Automated Data Processing System (UADPS-SP) which is a supply-oriented system. Daily UADPS-SP transactional codes are converted to IDA/FMS execution codes on a tape. This tape is provided to the IDA/FMS system daily. All other input is processed via CRT terminals.

All users are identified by a password which permits access to specific functions. The password does not appear on the screen, but identifies the organization attempting to input to the system. IDA/FMS has a menu tailored to each system user. There are 57 applications available in the IDA menu and 98 applications available in the FMS menu. Only those applications authorized are diplayed to an individual operator and system controllers prohibit the accessing of users information by other system users. A more detailed discussion of system inquiry capability is presented in a subsequent section of this system description.

The system is normally available from 0700 to 1600 Monday through Friday for user inquiry or input. Some classifications of input for the IDA module require batch balancing prior to system processing.

Batches which fail to balance are printed on the users printer and are corrected by the user.

4. DATA CONVERSION

The IDA/FMS system utilizes CRTs with control units and dedicated telecommunications line. The system has been designed to permit decentralized input stations with CRTs and has a centralized key station with data entry devices to provide back-up input capability to the system. The NARDAC, NAS Pensacola card readers are utilized to read the job control cards to the IBM 360/65 prior to processing the IDA/FMS programs. Communications terminals utilized in the system are:

- IBM 3270 Compatible Terminals (3 types)
- IBM 3740 or CMC-7 Data Entry System Terminal
- Mohawk 7500 Terminal
- IBM 2968 Terminal.

Several CRTs are linked to one control unit at remote sites and the IBM 360/65 has a front end communication controller associated with it. Use of the systems back-up disk to tape system is discouraged unless terminals are inoperative.

5. SYSTEM INTERFACES

NETFMS (Naval Education and Training Financial Management System) was designed and introduced at the NAS Pensacola prior to IDA implementation. It processed the accounting data via On-Line Data Entry System. Although independently designed and operational prior to the IDA effort, this NETFMS performed the accounting functions which

are part of the IDA design. An IDA (or disbursing capability) was added and it occurs first in the procesing cycle and the FMS module utilizes files updated during the IDA processing. IDA/FMS is the resulting system and appears as one system to the users of the system. This total system has been designated as the IDA System to be adopted in the Navy Financial Community by the Navy Comptroller's Office. It will be exported to various sites in the near future.

In addition to the supply input obtained from UADPS-SP previously described (see Section 3), there are several other systems which supply input to IDA/FMS. These systems are:

- Civilian Payroll System
- Military Manhour Accounting System (3M)
- Military Labor System.

This input is either biweekly or monthly and provides information for accounting reports produced by IDA/FMS.

6. SYSTEM EDITS

The purpose of this section is to identify the types of editing performed by the IDA/FMS system. Prior to input into the system the payment validation section computes the total amount of payments to be processed and enters this total into the system, with similar procedures performed for obligation data. After entering the individual amounts, the system automatically adds the individual totals and compares it to the preentered batch total. Accepted batches are listed on the Accepted Batch Report and forwarded to the edit process. Batches which fail to balance or have an unacceptable business date or are missing the AAA record are placed in a suspense file for corrective action. A subsequent section of this system description discusses error correction procedures.

All accepted batches are validated for accuracy by the system. Regardless of the type of input, each data element is validated for completeness of data fields, classification of data digits (alpha/numeric/alphanumeric) and the accuracy of data elements. All transactions which pass this initial validation appear on the valid detail transaction report and are passed on for additional processing by the payment certification, disbursement processing, and accounting routines. Invalid transactions are placed in the suspense file for correction.

7. ERROR CORRECTION

Error correction procedures refer to those activities performed in reprocessing rejected transactions data. In the CNET IDA/FMS system there are 3 sets of correction procedures based on the input source. Each of these 3 categories is discussed below.

- 3741 Input
- CRT Input
- Tape Input

(1) 3741 Corrections

The IDA system has been designed to retain all batches which are out-of-balance, are missing the AAA record or have an invalid business data. When any of these errors occur the batch number and narrative description of the error conditions will be returned on disk. Errors other than those mentioned above will have the complete batch rejected and the error conditions noted.

Correction inputs to correct out-of-balance conditions prior to daily processing must contain a code which denotes that a

correction is being made to a batch or that the complete batch needs to be replaced. Alpha characters will identify specific correction codes. All batches will be rebalanced after correction.

(2) CRT Input

All transactions will normally be inputted via CRTs. The key to disk procedure described later in this section is provided only as a description of system designed backup capability which exists. All transactions input via a CRT will be validated when keyed and edits applied instantaneously. These errors will be highlighted on the CRT for immediate correction. Any out of balance batches will be printed if requested. When batches are placed in the suspense file via the CRT, the inquiry key for future correction will be the serial number and batch number. The serial number is not actual placed in the record, but is internally generated by the system when printing the suspense file items.

(3) Tape Input

As previously mentioned, tape input is used only as a back-up for normal input processing which will be via CRT. All batches which are out of balance, have a bad business date, or have no AAA identification are considered rejects. All out-of-balance batches will be printed daily and placed in the suspense file. The system provides capability for corrections to be input via CRT or 3741 and insures that the batch is rebalanced. If additional corrections are still needed a message is immediately transmitted to the input source for satellite activity rejections that are duplicate batches, have a bad business date or activity, or EC. The complete batch must be reinputted.

8. DATA BASE

The purpose of this section is to identify the data base files, communication links and processing cycles the IDA system utilizes. Disk files are utilized by the IDA system and it is controlled by a data base management system compatible with the NETFMS system. The files maintained by the IDA system are identified in Exhibit A-5. The processing advantages inherent in the IDA data base system include simultaneous updating of all files, inquiry capabilities for certain data elements and relationship validations of all data. The data files used and the types of data in each file are briefly discussed below.

- Input Queue Data Base File (DIDT/DETS)

  The Input Queue Detail Master file provides access to the Input Queue Detail (DETS) file by sorting on batch control number. The Detail file contains records linked to the various batch masters. All out of balance batches and invalid or erroneous detail transactions are passed to the batch control master and detail files for later correction.

- Batch Control Master File (BCHM)

  This file provides a control point for entry into the Batch Control file by Batch Control Number.

- Batch Control File

  The batch control file contains both out-of-balance batches and invalid and erroneous detail transactions. Transactions will appear on an invalid transaction report when they are placed in suspense and these transactions will appear on the daily average report until cleared from suspense.

IDA/FMS Data Base Schematic

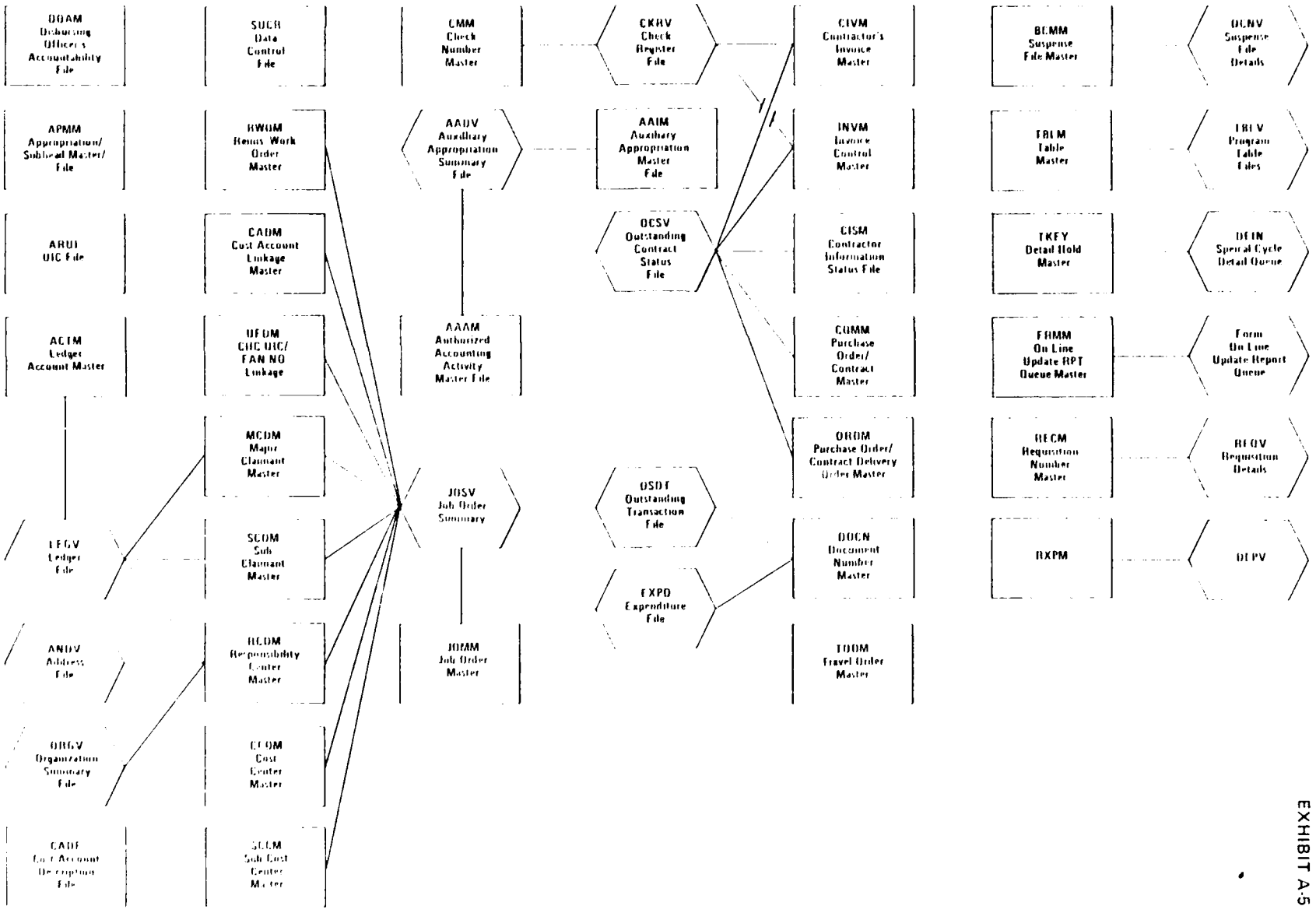
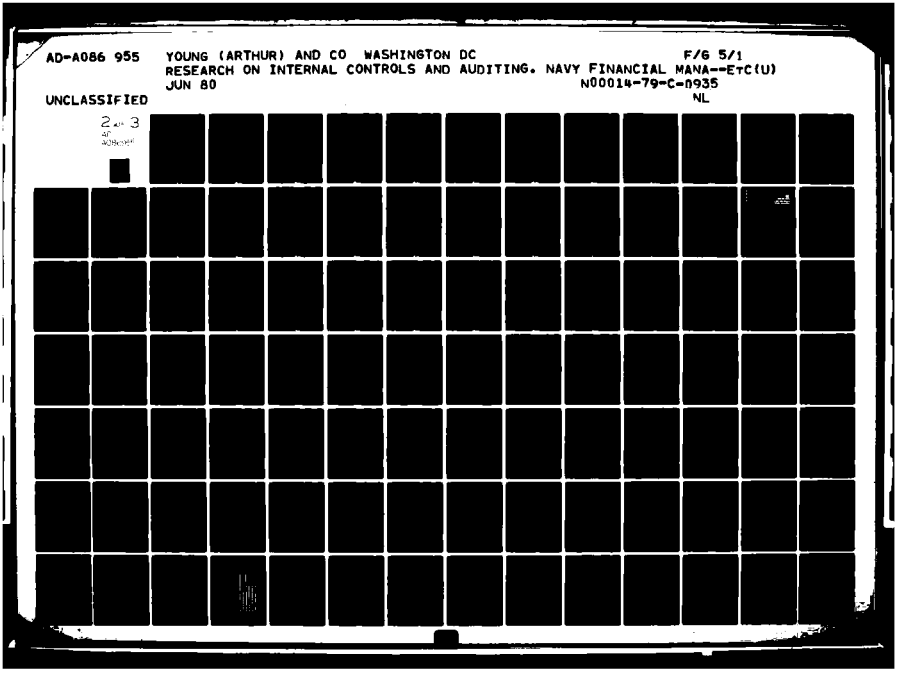


EXHIBIT A-5

AD-A086 955 YOUNG (ARTHUR) AND CO WASHINGTON DC F/G 5/1
RESEARCH ON INTERNAL CONTROLS AND AUDITING. NAVY FINANCIAL MANA--ETC(U)
JUN 80 N00014-79-C-0935
UNCLASSIFIED NL



- Auxiliary Appropriation Master File (AADM)

  This file contains all valid appropriations against which payments can be made other than the NETFMS valid appropriations.

- Disbursing Officer Accountability File (DOAM)

  By utilizing the disbursing officer's symbol, this file maintains each D.O.'s accountability. Daily, this file will use the checks issued, collections, and adjustments to determine the current accountability as well as the cumulative for the month.

- Contractor's Information/Status File (CISM)

  This file contains the contractor's ID number and name and address. The status flag in used to prohibit payment processing for contractors who are bankrupt or owe the government money. This file is also used to provide access to the outstanding contract status file by contractor number.

- Outstanding Contract Status File (OCSV)

  This file is used to maintain a complete status of each active contract until it is completely liquidated. Once liquidated a contract status report will be produced showing no unliquidated balance.

- Suspense File Details (BCHV)

  This file contains all batches which are out of balance or contain invalid or erroneous data transactions. All batches remain in this file until corrective action is initiated.

- Purchase Order/Delivery Order Master (ORDM)

  This file contains the contract or purchase order numbers and the delivery order number for all records in the Outstanding Contract Status File.

- Various Reference Files

  In addition to the files outlined above, the IDA data base contains several reference files, including:

  Suspense File Master
  Check Number Master File
  Check Register File
  Contract Number Master File
  Contractor's Invoice Master File
  Invoice Control Master File
  Purchase Order/Contract Delivery Order Master File
  Auxiliary Appropriation Data File
  Authorization Accounting Activity Master File

FMS Data Base Files

- Ledger Account Number File (ACTM)

  This file contains the General Ledger Account titles, contains codes which indicate whether this is a credit or debit account and if this is a summary or subsidary account.

- Unit Identification Code File (ARUI)

  This file provides the capability of validating job order UIC's, extracting the alignment code and responsibility center of each UIC and determining if this UIC is a Public Works Department.

- Cost Account Descriptions Master File (CADE)

  This file assures that only valid cost accounts are set up in job order masters. It provides a means of validating the cost accounts when job orders are established.

- Cost Center Master File (CCDM)

  The CCDM file provides all entry point into the Job Order summary file (JOSV) and the Organizational Summary File (ORGV).

- Document Number Master File/Outstanding Transaction File/Expenditure File (DOCM/OSDT/EXPD)

  The Document Number Master provides an entry point into the Outstanding Transaction File and Expenditure File. The Outstanding Transaction File provides activities with both detail and summary information by document, job order and fiscal year. It is updated by transactions entering the system. The expenditure file provides the capability to research expenditure activity for the last 6 months.

- On-Line Update-Change File (FRMM/FORM)

  This file permits on-line changes/updates to the Job Order Master file.

- Job-Order Master File (JORM)

  This file allows system authorized users to add, change, or delete job orders. It provides its capability to view job orders and review data elements.

- Job Order Summary File (JOSV)

  Provides the capability to view amounts recorded by transaction type as of the previous business date.

- General Ledger File (LEGV)

  This file contains the data reqired to produce trial Balance Reports and linkage to major claimant master, sub-claimant master and responsibility center master files.

- Travel Order Master File (TORM)

  This file contains the status of outstanding travel orders by name, order number, and amount. Activities can research O/S travel orders.

REFERENCE FILES

Cost Account Linkage Master File (CADM)
Budget Class Linkage Master File (BCCM)
Expense Element Master File (EEDM)
Equipment Code Master File (EQDM)
Functional Linkage Master File (FLDM)
Master Claimant Master File (MCDM)
Organization Summary/Plans/Norms File (ORGV)
Program Element Linkage Master File (PEDM)
Responsibility Center Master File (RCDM)
Public Works File (PWDV)
Reimbursable Work Order Master File (RWOM)
Sub-Cost Center Master File (SCCM)
Sub-Claimant Master File (SCDM)
Sub-Function Linkage Master File (SFDM)
Data Control File (SUCR) Table Master Table File (TBLM/TBLV)

Detail Hold File (TKEY/DETH)
Chargeable VIC/FAN #Linkage Master File (VFDM)
Address File (ADRU)

The IDA/FMS files are stored on direct access storage devices and various files are on-line during batch processing and when communication terminals are operating. Disbursing and Job Order files are available for on-line updating and accounting related files are available for access; these accounting files are batch updated each night. All reports are produced on magnetic tape and additional log tapes are utilized for back-up and recovery. IDA/FMS disk files are periodically transferred to tape for back-up. This transfer provides a vehicle for reconstruction in the event of disk malfunction. Restart capability consists of a transaction tape log which will inform the operator of the last check point restart position for reprocessing transactions.

The IDA/FMS system runs on a daily, weekly, biweekly, monthly, quarterly, annual, and as required output cycle. Since the daily cycle is representative of all processing cycles, it is the only cycle we will describe in this system description. The IDA module of the IDA/FMS system begins by validating and updating the various control records needed for system processing. Input transactions are then validated and the data base files updated. Transactions are generated for the FMS module and the FRS interface tape is formatted. Report data is then extracted and reports are produced. The reports produced are discussed in the following section of the system description.

The FMS module has as its major function, the processing of accounting data. Input is validated and data base files synthesized. Computations are performed and any required maintenance is executed. Output is then formatted for report preparation and reports are produced.

Exhibit A-6 which follows this page represents the telecommunications network utilized by the IDA/FMS system. The system presently services 90 terminals and 54 printers located throughout region #7. Region #7 consists of Kentucky, Tennessee, Alabama, Mississippi, and the Northwest corner of Florida. Parts of Texas including the Naval Air Stations at Beeville, Corpus Christi, Kingsville and Dallas also are served by IDA/FMS. The mainframe is currently an IBM 360/65 with a core size of 2M bytes. There is a conversion planned for midsummer 1980 to a UNIVAC 1100 machine. The telecommunications system is controlled by a COM 10/3650 front end communications device and has multi-port modems where multiple CRT's are present at remote locations. Dedicated lines are in place within the Naval Air Station at Pensacola and phone lines are utilized for satellite locations.

9. SYSTEM REPORTING AND INQUIRY CAPABILITIES

The purpose of this section is to identify the system reports prepared and the inquiry capabilities available to various system users. In order to facilitate our discussion in this regard, we have divided the discussion between system reports and inquiry capability. Each is discussed below.

System reports produced by the IDA/FMS system can be classified as daily, weekly, biweekly, monthly, quarterly, and annually. Additionally there are "As Required" reports as well as terminal inquiry capabilities available to system users. The system produced reports are listed by module in Exhibit A-7. This Exhibit also identifies the report frequency for all system hard copy products. Reports we reviewed appeared well organized and consisted of control, status, accounting, cost and management reports, which were summarized at various levels.

System inquiry capability is available daily to system users

IDA/FMS Telecommunications Network

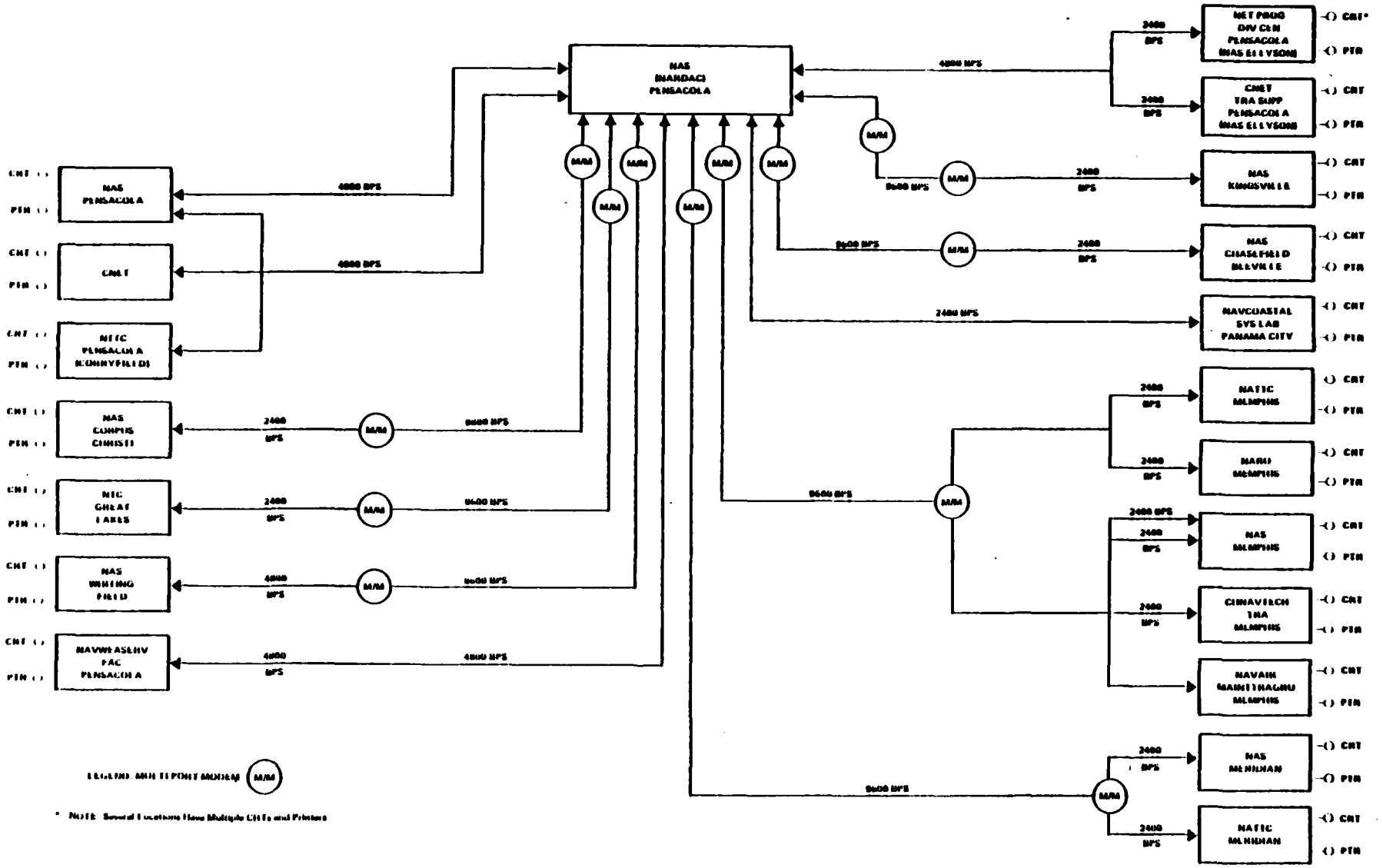


EXHIBIT A-6

SYSTEM REPORTS

IDA OUTPUTS

REPORT/LISTING TITLE	FREQUENCY D/W/M/A/O/Q/A	OUTPUT MEDIUM
Out of Balance Report	D	Printer
Accepted Batch Report	D	Printer
Suspense Listing	D	CRT
Suspense Correction List	D	Printer
Overaged Suspense List	D	Printer
Reconciliation Report	D	Printer
IDA Transaction Report	D	Printer
Cashbook Trial Balance (NAVCOMPT 2199)	D or A/O	Printer (to D.O.)
Check Issue Listing	D	Printer/CRT
Collection Register	D	Printer (to D.O.)
Recap of Block Level Totals (SF 1179)	M	Printer (to D.O.)
Check Register	M	Printer (to D.O.)
Appropriation Adjustment Report	M	Printer (to D.O.)
Schedule of Confirmed Deposits	M	Printer (to D.O.)
Auxillary Appropriation Data File	A/O	Printer/CRT
Contractor's Information Status Report	A/O	Printer/CRT
Routine Transaction Audit Report	D	Printer/CRT
Payment Certification Detail Report	D	Printer/CRT
Payment Certification Deferred/ Exception Report	D	Printer/CRT
Lost Discount Report	D	Printer

IDA OUTPUTS (Continued)

REPORT/LISTING TITLE	FREQUENCY D/W/M/A/O/Q/A	OUTPUT MEDIUM
Military Services Report (NAVCOMPT 2182 or (NAVCOMPT 7000/17)	M	Printer
Operating Budget/Expense Report (NAVCOMPT 2168 or 7000/8)	M	Printer
Performance Statement (NAVCOMPT 2169 or 7000/9)	M	Printer
Disbursement Notification Report; Interim	D	Printer (to D.O.) (at FIPC)
Daily Payment Register	D	Printer/CRT
Daily Balance Sheet	D	Printer/CRT (to D.O.)
Schedule of Cancelled Checks	D	Printer/CRT (to D.O.)
Contract Status Report	D	Printer/CRT
Travel Processed Report	D	Printer/CRT (to D.O.)
U.S. Treasury Checks (output)	D	Check
U.S. Treasury Checks (advice of payment stubs)	D	Stub
Accounts Payable Report	M	Printer (to NAFC WASH)
Contract Advance Payments; Report of	Q	Printer (to NAVCOMPT)
Progress Payments Status Report	Q	Printer (to NAVCOMPT)
Balance of Payments; Initial	Q	Printer (to NFC Cleve)

IDA OUTPUTS (Continued)

REPORT/LISTING TITLE	FREQUENCY D/W/M/A/O/Q/A	OUTPUT MEDIUM
Annual Class Object Report	A	Printer (to NAVCOMPT)
Monthly Procurement Summary of Actions $10,000 or less (NAVCOMPT 1057)	M	Printer
Purchase Statistics (NAVSUP 80)	M/ A/O	Printer
Spoiled or Voided Checks; Report of	M	Printer

FMS OUTPUTS

REPORT/LISTING TITLE	FREQUENCY D/W/M/A/O/Q/A	OUTPUT MEDIUM
RMS J.O. Master Change Listing	D	Printer
Reimbursable W.O. Update Listing	D	Printer
Travel Order Advance Master Update Listing	D	Printer
Input Batch Balancing	D	Printer
RMS Input Batch Control Report	D	Printer
Invalid Input/Erroneous J.O. Report	D	Printer
Corrected J.O. Report	D	Printer
P.W. Labor Summary	D	Printer
Week-to-date Input Control	D	Printer
Generated J.O. Transaction List	D	Printer
Generated J.O. Master List	D	Printer
Daily Transaction Journal	D	Printer
Outstanding File Balance Sheet	W	Printer
Weekly Transaction Journal	W	Printer
Weekly General Ledger	W	Printer
Weekly Fund Status (Detail)	W	Printer
Weekly Fund Status (Summary)	W	Printer
Reimbursable W.O. Report	W	Printer
RMS J.O. Master List	W	Printer
Organizational File Listing	W	Printer

FMS OUTPUTS (Continued)

REPORT/LISTING TITLE	FREQUENCY D/W/M/A/O/Q/A	OUTPUT MEDIUM
Reimbursable W.O. Master List	W	Printer
Expenditure Listing	W	Printer
Expenditures by Bill # NAVCOMPT 2974	W	Printer
Expenditures by Issuing Activities	W	Printer
Invalid Work Center Labor Class Listing	W	Printer
Valid/Invalid Adjustment Transaction	W	Printer
Erroneous Canceled/Completed J.O. Report	W	Printer
Weekly Fund Status Report	W	Printer
Control Maintenance Tab C by Shop Report	W	Printer
Control Maintenance Tab C by Work Center Report	W	Printer
Anticipated Norms Listing	M	Printer
Annual Plans Listing	M	Printer
J.O. Status Report	M	Printer
Appropriate/Non-Appropriate Fund Report	M	Printer
P.W. Utilities Cost Report M-19818 (NAVCOMPT 2127)	M	Printer
J.O. Expense Report	M	Printer
Flying Hours Cost Report (FHCR) (OPNAV 7310.2)	M	Printer
Reconciliation of Plant Account	M	Printer

FMS OUTPUTS (Continued)

REPORT/LISTING TITLE	FREQUENCY D/W/M/A/O/Q/A	OUTPUT MEDIUM
Outstanding Transactions Journal by Resp. Center	M	Printer
Outstanding Transactions Journal by Cost Center	M	Printer
Outstanding Credit Balance Listing	M	Printer
Travel Advance Transaction Listing	M	Printer
Average Outstanding Travel Advances	M	Printer
NAVCOMPT 2170 (Financial Ledger Reports)	M	Printer
NAVCOMPT 2025 (File Audit Report)	M	Printer
NAVCOMPT 2030	M	Printer
NAVCOMPT 2193 (Report on Reimbursable Orders)	M	Printer
NAVCOMPT 2051 (Labor Roll or Material Charges and Credits)	M	Printer
NAVCOMPT 2074	M	Printer
Object Class Report	M	Printer
NAVCOMPT 176 Report	M	Printer
Bupers 7301-1 Fan Report	M	Printer
Housing Cost Report	M	Printer
Detail Expense Report (NAVCOMPT 7000.8)	M	Printer
PW TAB-B Control Maintenance Report by Shop	M	Printer
Monthly Report of Civilian Employment by App'n (NAVCOMPT 2270)	M	Printer

FMS OUTPUTS (Continued)

REPORT/LISTING TITLE	FREQUENCY D/W/M/A/O/Q/A	OUTPUT MEDIUM
Military Service Report (NAVCOMPT 2182)	M	Printer
PW TAB-B Control Maintenance	M	Printer
Quarterly Utilities Cost Report	Q	Printer
Average O/S Accounts Payable	Q	Printer
NAVCOMPT 2127 Utilities Cost Report	Q	Printer
PW Transportation Cost Report	Q	Printer
Semi-Annual Expenditure Report	Semi-A	Printer
J.O. Master List	A	Printer
Responsibility Center Listings	A	Printer
Responsibility Center Report Distribution Listing	A	Printer
Cost Center Listing	A	Printer
Sub-Cost Center Listing	A	Printer
Outstanding Transaction File to J.O. Master Reconciliation	A	Printer
Flying Hours Cost Report (FHCR)	A/M	Printer
Reimbursable UF Order Transfer Report	A	Printer
Obl/Expend. Closeout	A	Printer
Allotment/OB Report	A	Printer
Bi-weekly Labor Report (Detailed)	Bi-Weekly	
Bi-weekly Labor Report (Summary)	Bi-weekly	

TERMINAL MENU

IDA MODULE - SELECTION LIST

- APP Contractor Information Status
- View Contractor Information Status
- Change Contractor Information Status
- Delete Contractor Information Status
- APP IDA AAA UIC Report
- View IIA AAA UIC Report
- Delete IIA AAA UIC Record
- Add IDA Appropriation Record
- View IIA Appropriation Record
- Change IDA Appropriation Record
- Delete IDA Appropriation Report
- Add Disbursing Officer Record
- Change Disbursing Officer Record
- View Disbursing Officer Record
- Delete Disbursing Officer Record
- Add Record To AADM File
- View Record in AADM File
- Change Record In AADM File
- Delete Record From AADM File
- View IDA Table
- Add Obligation Batch
- Change Obligation Batch
- Delete Obligation Records
- Delete Obligation Batch

- Add Payment Batch
- Change Payment Batch
- Delete Payment Records
- Delete Payment Batch
- Print Suspense Batches
- Contract Status By Contract Number
- Contract Status by Contract DEL/CRI
- Contract Status by Contract DEL/Live
- Contract Status By Invoice Number
- Contract Status By Conte Invoice No.
- Contract Status by Check Number
- Invoice Payment Inquiry
- Invoice Payment Certification
- View Check Register Records
- Check Cancellation
- Update Doam Monthly Amounts
- Contract Status Audit Update
- Invoice Payment Certification by Batch
- View Contract Status by Contractor Name
- Print Chain of OCSV Records
- Aux Appropriation Inquiry by AAA-UIC
- Delete ORDM Record
- Unliquidated Obligation by Requisition NR
- Add Stock Fund OBL Batch
- Change Stock Fund OBL Batch
- Delete Stock Fund OBL Transaction
- Delete Stock Fund OBL Batch
- View Travel Order Record
- View Blanket Purchase Order Agreement
- Add Blanket Purchase Order Agreement
- Change Blanket Purchase Order Agreement
- Delete Blanket Purchase Order Agreement
- BGHM/BGHV File Maintenance

TERMINAL MENU

FMS MODULE - SELECTION LIST

- View Outstanding Document Details
- View Outstanding Document Summary
- View Cade Report
- Add Cade Record
- Delete Cade Record
- View UIC Record
- Add UIC Record
- Delete UIC Record
- Delete Table Premium Pay Rates
- View Expenditure Record
- View Trial Balance Titles
- Add Trial Balance Titles
- Change Trial Balance Titles
- Delete Trial Balance Titles
- View Responsibility Center Records
- Add Responsibility Center Records
- Change Responsibility Center Records
- View Cost Center Records
- Add Cost Center Records
- Change Cost Center Records
- View Sue Cost Center Records
- APP Sue Cost Center Records
- Change Sub Cost Center Records
- View General Ledger by Activity
- View General Ledger by Major Claimant

- View General Ledger by Sub Claimant
- View/Print GL Account Posting Criteria
- Outstanding Detail File Maintenance
- View Financial Reports by Activity
- View Financial Reports by Major Claimant
- View Financial Reports by Sub Claimant
- All Travel Order Record
- View Travel Order Report
- Change Travel Order Record
- Delete Travel Order Record
- Add Job Order Master
- View Job Order Master
- Change Order Master
- Delete Job Order Master
- View Job Order Status
- View Oblig/Exp by Resp Center
- View Oblig/Exp by Cost Center
- View Oblig/Exp by Sub Cost Center
- View Reimbursables Job Orders
- View Job Order Totals by Responsibility Center
- View Job Order Totals by Cost Center
- View Job Order Totals by Sub Cost Center
- Job Order Inquiry By Data Element
- Add Activity Address Record
- View Activity Address Record
- Change Activity Address Record
- Delete Activity Address Records
- Reimbursable Job Order Inquiry
- View Reimbursable Work Order Master
- Change Reimbursable Work Order Master
- Broadcast-Individual Station/DRA&USER)
- Broadcast by Application (Password Depenient)
- Map Display Utility Program
- General Ledger Account Inquiry by Subhead

- General Ledger Account Inquiry by Resp Center
- Expenditure File Maintenance
- Print NETFMS Suspense Batches
- Input NETFMS Labor Batch
- Change NETFMS Labor Batch
- Delete NETFMS Labor Transactions
- Delete NETFMS Labor Batch
- Fund Status Inquiry by Resp Center
- Fund Status Inquiry by Cost Center
- Add Document Transmittal Batch
- Change Document Transmittal Batch
- Delete Document Transmittal Records
- Delete Document Transmittal Batch
- Add Batch Activity Table Record
- View Batch Activity Table Record
- Delete Batch Activity Table Record
- Add Table Premium Pay Rates
- View Table Premium Pay Rates
- Change Table Premium Pay Rates
- Add 1Ø8Ø Billing Addresses
- Delete Cost Center Records
- Delete Sub Cost Center Records
- Add Labor Adjustment Batch
- Change Labor Adjustment Batch
- Delete Labor Adjustment Records
- Delete Labor Adjustment Batch
- Add Work Unit Batch - Change Work Unit Batch
- Delete Work Unit Records
- Delete Work Unit Batch
- View 1Ø8Ø Billing Address
- Change 1Ø8Ø Billing Address
- Delete 1Ø8Ø Billing Address
- Change Travel Order With No Job Order
- Add 1Ø8Ø Bill RM Series Batch

- Change 1Ø8Ø Bill RM Series Batch
- Delete 1Ø8Ø Bill RM Series Records
- Delete 1Ø8Ø Bill RM Series Batch
- Release 1Ø8Ø Bills by Activity.

during normal working hours. The user must enter his password upon signing on the system and each unique password identifies the user's responsibility and limits his inquiry capability to those files related to his function. Comprehensive menus allow the user to select specific system applications but only those applications authorized are presented to the user on his menu. The system will not permit users to view or change information outside his responsibility and attempts to enter such requests or actions are not accepted by the system. The total menus available for the IDA and FMS portions of the system are presented in Exhibit A-8. Additionally any information which a user may view he may print on the printer located at his location.

11. DATA RECONCILIATION

The purpose of this section is to review the data reconciliation activities which take place after the preparation of system produced reports. These reconciliation activities are important in maintaining a valid and accurate data base. In the IDA/FMS System, all batch numbers are accounted for weekly. Satellite activities must account for the batches they have used and the NETFPIC and Accounting Branches reconcile batches utilized.

NETFIPC has devised a form whereby pre-established checkpoints have been determined and are validated weekly. Additionally, this form (See Exhibit A-9) requires general ledger account balances to be reviewed in a comprehensive manner. This type of reconciliation requires the accounting technician to verify the accuracy of system produced general ledgers for various responsibility centers. This Accounting Data Check also validates the reasonableness of expense accounts and the accuracy of the outstanding file and the balance in the weekly funds status report. Forms similar to the current fiscal year form presented in Exhibit A-9 are utilized to validate 1st and 2nd prior years data. All of those data check forms require the utilization of transaction journals, general ledgers and unique expense reports. This accounting information is related to fund status and outstanding obligation data. This type of comprehensive reconciliation adds significance to the integrity of the system produced data and adds creditability to the information maintained in the data base.

NEPTIC Form 7300-1 (2/80)

ACCOUNTING DATA CHECK FORM FOR NAVCOMPT 2199
Current Fiscal Year

			A/C	R/C	FY
Check Points:					
1031 = 2168-1 Col 11	3211 + 3212 = CR Bal		Accepted Reimb Orders = 1810		
9961 = 2168-1 Col 3	9951 + 9952 = DR Bal		A/C 967		= 2141
9991/9995 = 2182	3280,9964,9994 = 0 Bal				

Funds	1031D	+	CY Expenses	5010D	+
	1810D	+		5321D	+
Unobligated	3211C	-		5324D	+
	3212C	-	Undistributed	1930D	+
Obligated	998+999D	=	Check Point		=
Disbursements	1060C	+	Expenses	5000D	+
	1512D	-		1930D	+
Suspense	1910D	-	Accrued Exp	3311D	=
	1960D	-			
Accts Payable	2000C	+	1st PY UDO	3232C	+
	2100C	+	CY Expense	5020D	+
Check Point		=	Exp Authority	9965C	=
			2nd PY UDO	3232C	+
Check Point		+	CY Exp	5030D	+
Direct UDOs	3230C	+	Exp Authority	9966C	=
Reimb Income	4010C	-			
Direct Oblig	0998D	=	MRP - UDOs	3239C	+
			MRP - Exp	5324D	+
Check Point		+	MRP 061	0949	=
Undelivered Orders	3230C	+			
	3232C	+			
Obligated	998+999D	=			
Unobligated Balance	0931D	+			
	0932D	+			
Unobligated		=			

R/C_____

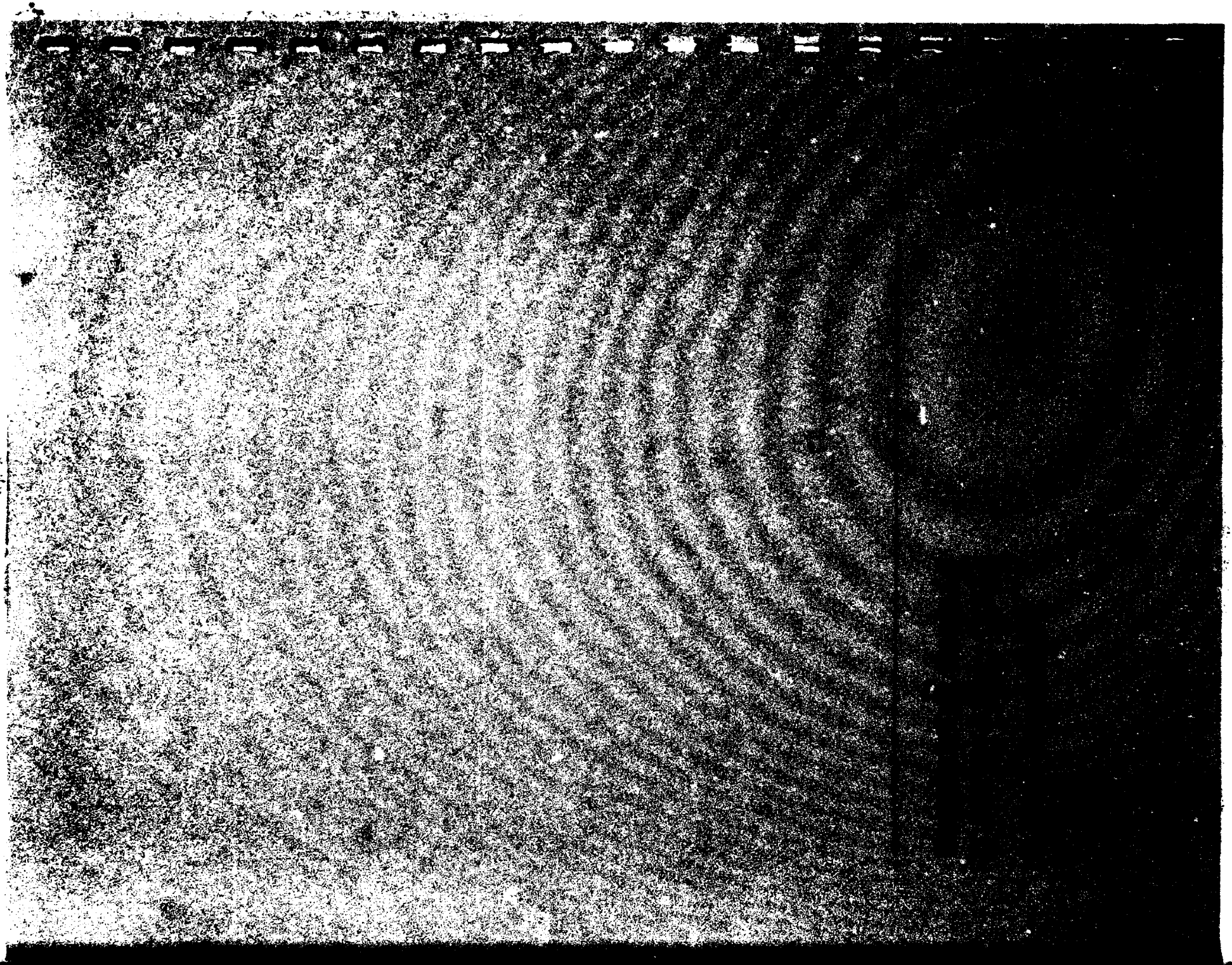
ACCOUNTING DATA CHECK FORM FOR NAVCOMPT 2199
Current Fiscal Year

Available Expenses	9951D	-	Balance Direct	9964D	-
	9952D	-	Bal Reimb 1st PY	9965C	+
Budgeted Expenses	9961C	+	Bal Reimb 2nd PY	9966C	+
	9962C	+	Accrued Expenses	3311D	=
	9963C	+			

REIMBURSABLE

FUNDS	LESS UNDELIVERED ORDERS	LESS INCOME		UNOBLIGATED BALANCE
1811D	3233C	4011C	=	
1812D	3234C	4012C	=	
1813D	3235C	4013C	=	
1814D	3236C	4014C	=	
1815D	3237C	4015C	=	
1816D	3238C	4016C	=	
1810	3232C	4010	=	3212

Collected	1040D	+
Accounts Receivable	1100D	+
	1200D	+
Income	4010C	=



PASS Phase II (SDS)
SYSTEM DESCRIPTION

The purpose of the this System Description is to present the results of our research into Pay/Personnel Administrative Support Phase II (Source Data System), PASS Phase II (SDS). We have obtained our information on the system from reviews of documentation and discussions with prcject management and other personnel involved with PASS Phase II (SDS). The level of detail provided is highest for the first phase of the automated system development as that is the phase currently under development. The system, including PASS Phase III, is scheduled to be fully operational and integrated in FY-85. Descriptions of the phases of the automated system development and of the overall PASS project are contained in Section 1.

To facilitate an understanding of PASS Phase II (SDS), we have divided our discussion into the following sections:

- Background and System Overview
- System Documentation
- Source Documents and Input Preparation
- Automated System Interfaces
- Data Base
- System Edits and Corrections
- Reconciliations

- System Reports, Inquiry Capabilities and other Products

A discussion of each of these subject areas follows. An acronym list is provided at the end of the System Description.

1. BACKGROUND AND SYSTEM OVERVIEW

The purpose of PASS Phase II (SDS) is to automate the overall Navy military personnel and pay management information systems in order to improve the quality and timeliness of information. Another objective is to improve the pay and personnel service which Navy service members receive. PASS Phase II (SDS) will replace, among other things, the present optical character recognition system used for processing personnel and pay related transactions in the field and for processing personnel transactions as inputs into the manpower and personnel management information system.

PASS Phase II (SDS) will provide for the automated collection of military personnel and pay information for the Navy's projected 525,000 military personnel. The Navy will have pay and personnel offices, PASS Offices, located worldwide where there are concentrations of Navy personnel. These 25 major offices and 152 satellite offices will collect data, transmit it to headquarters data bases and provide pay, personnel management and passenger transportation services to Navy military personnel. Specifically, the average PASS Office serves 40 commands and maintains 2900 individual pay and personnel records.

- PASS Phase II (SDS) is the automated data system being developed to support the PASS Offices and interface with headquarters' pay and personnel management information systems. PASS Phase II is the system being described in this System Description. See Exhibit B-1 for an overview of PASS Phase II (SDS).

The other phases are:

- PASS Phase I is the consolidation and combination of military personnel, pay and passenger transportation offices, which had been separate offices, into a network of PASS Offices. All consolidations and combinations are scheduled for completion by the end of 1980.

- PASS Phase III is the integration and improvement of the pay, personnel and passenger transportation management systems. The accomplishments of this phase will evolve from and build upon lessons learned and procedures developed in Phases I and II.

Hereinafter, PASS Phases will be referred to by Roman numerals. PASS Phase II (SDS) itself has four phases in its development which are referred to by Arabic numerals and are described in a later part of this section.

The combination of PASS Phase I, the combination of pay, personnel and passenger transportation functions, with PASS Phase II (SDS), the automation of the information system, will facilitate the reporting of personnel transactions to headquarters and updating the headquarters' data bases from about one hundred fifty two PASS Offices located in the continental U.S. (CONUS) and overseas. Another function of PASS Phase II (SDS) is to provide an automated source of information. PASS Phase II (SDS) will also accommodate the down flow of information from headquarters' pay and personnel data bases on headquarters initiated personnel and pay transactions. This information will down flow, that is, be transmitted from headquarters to PASS Offices, become a part of the local records and will be used to provide personnel management and pay support at the local level. Additionally, PASS Phase II (SDS) will accomodate payroll processing, the placing and receiving of reservations for overseas travel and will also facilitate

the retrieval of information connected with passenger transportation functions.

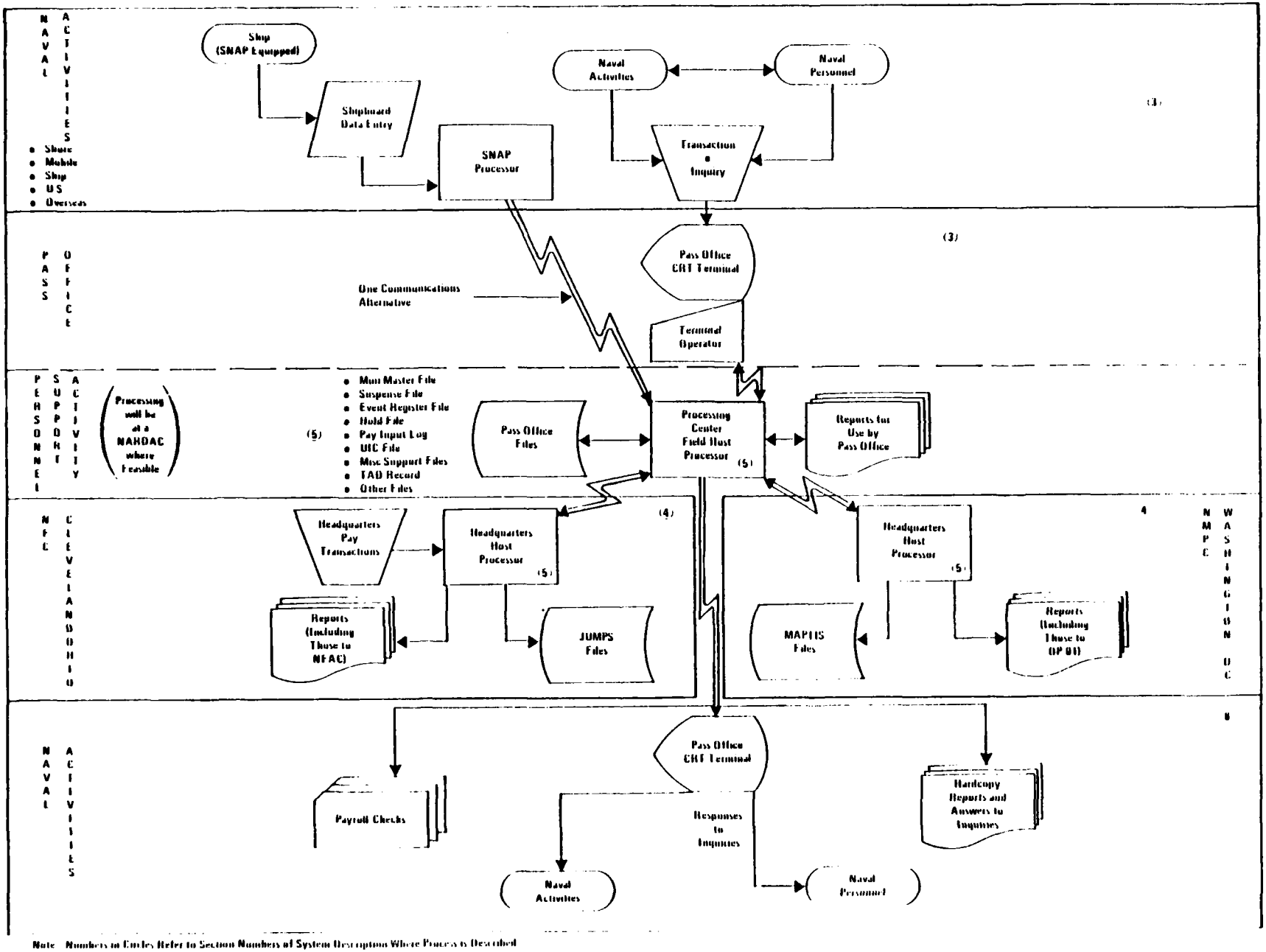
The concepts of the processes described above are diagrammed in the flowchart in Exhibit B-1. This exhibit illustrates the initiating transactions generated at the activity level. The data from source documents reflecting these transactions are entered into a CRT terminal by a keyboard operator at the PASS office. Once released for transmission, the network controllers regulate the entry of data into the PASS files and its transmission to headquarters' data bases, if required. Feedback on the data entered into headquarters' data bases is sent to the local computers and from there to the data base. Some transactions may be such that only local information is needed to answer the inquiry. The bottom level of the flowchart depicts the various classes of products available from the system. It is this process, flowcharted in Exhibit B-1, which is described in detail in this System Description.

Additionally, the Navy plans to equip a number of ships with the Shipboard Non-tactical ADP Program (SNAP II) equipment. PASS Phase II (SDS) applications will be adapted for SNAP II. Data entry into the PASS Phase II (SDS) system will be by either telephone, radio, mail or by the hand carrying of a disc to a PASS Office or Processing Center which will serve as a link in the transmission of shipboard pay and personnel data to headquarters' data bases. The mobility of ships means that a ship will use the nearest or most convenient PASS Office or Processing Center. The ship will not be assigned to only one PASS Office as are fixed location activities.

(1) Organization

At this point, it is necessary to briefly review the PASS related missions of those organizations involved with PASS so that we may understand the reasons for the flow of information

Conceptual Flowchart of PASS Phase II (SDS)



Note: Numbers in Circles Refer to Section Numbers of System Description Where Process is Described

through the automated Source Data System. A diagram of the organization and its associated information flow is provided by Exhibit B-2.

- Deputy Chief of Navel Operations (Manpower, Personnel and Training) (OP-01), Washington, D.C. - Responsible for planning, programming and budgeting for the Navy's military personnel requirements. The PASS Program Manager, located within OP-01, is responsible for PASS policy implementation and program execution.

- Naval Military Personnel Command, Washington, D.C. - A field command reporting to OP-01 and responsible for obtaining military personnel and for their distribution, administration, career motivation, advancement, retention, separation and retirement. This command executes the PASS program.

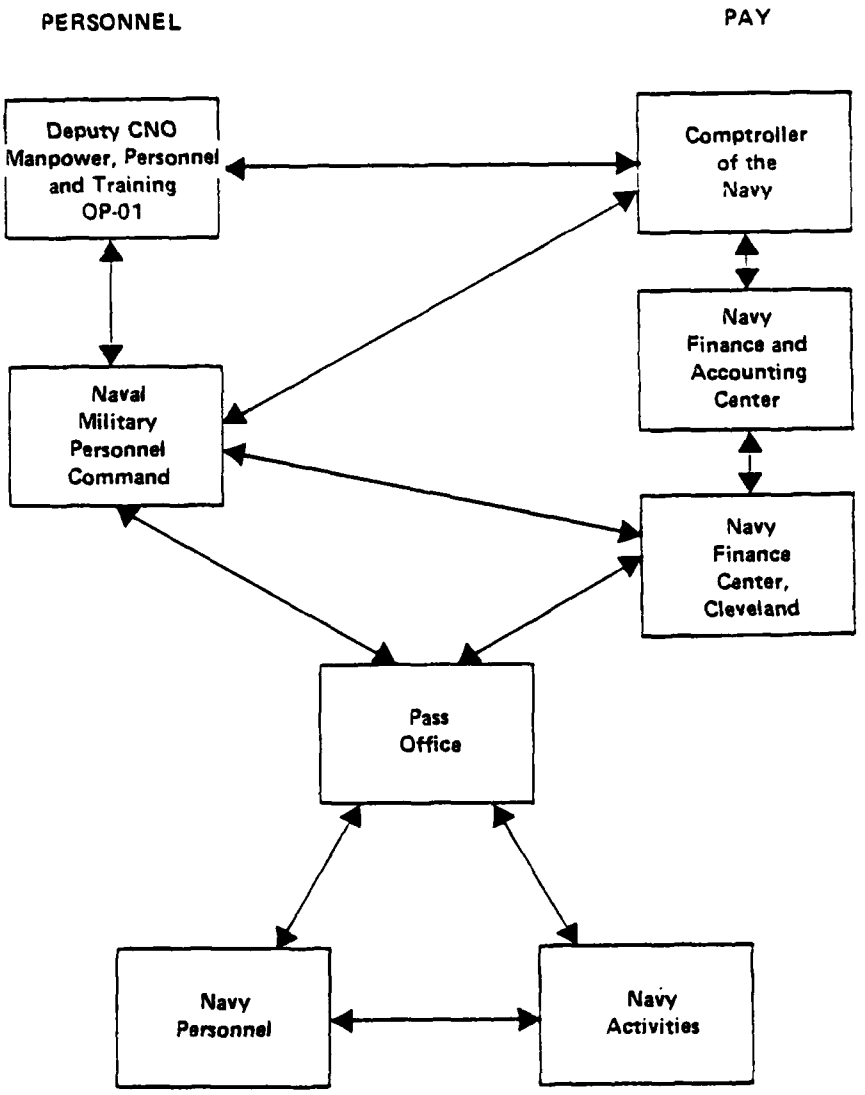
- Comptroller of the Navy, Washington, D.C. - Responsible for Navy financial management.

- Navy Finance and Accounting Center, Washington, D.C. - Accounts for Navy funds for the Comptroller of the Navy.

- Navy Finance Center, Cleveland, Ohio - Manages the Navy's pay system including the Joint Uniform Military Pay System (JUMPS).

- PASS Offices - Reporting to an Area Coordinator and receiving technical guidance from the Naval Military Personnel Command and the Navy Finance Center, CRT terminal equipped PASS offices are located in areas where there is a concentration of Naval personnel in order to provide pay, personnel and passenger transportation services to Navy military

Personnel and Pay Information Flow



personnel. PASS offices are entitled Personnel Support Detachments (PSDs) and two or more PSDs are under the command of an area Personnel Support Activity (PSA) which is under the command of a major claimant such as a Fleet Commander. Processing Centers (PCs), which contain computers and other peripheral equipment are either part of the PSA or located at a Navy Regional Data Automation Center (NARDAC) in close proximity to the PSA. Current plans call for all but ten Processing Centers to be located at NARDACs.

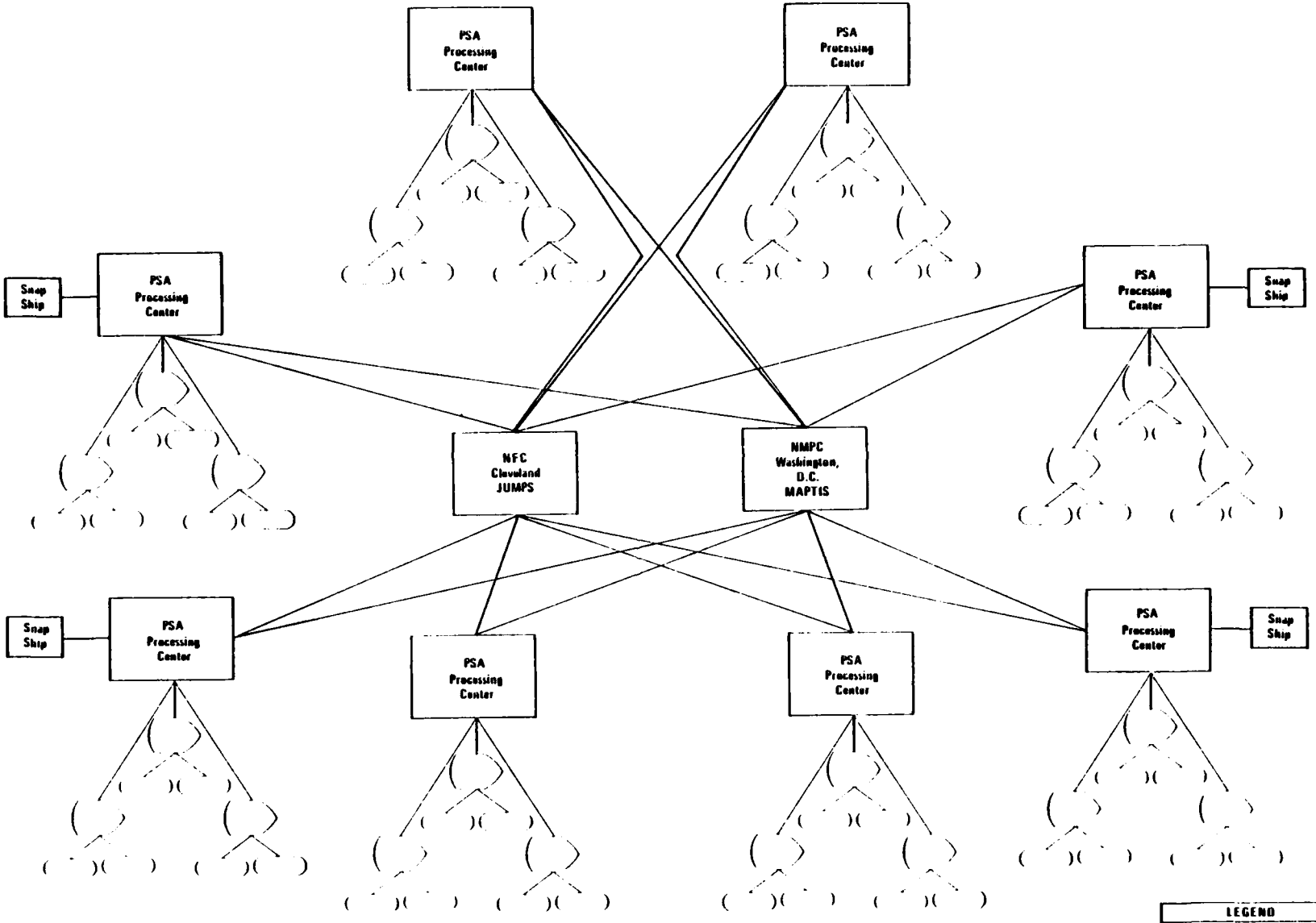
(2) Headquarters' Data Bases

PASS Phase II (SDS) will interface with two headquarters' data bases. The Manpower, Personnel and Training Information System (MAPTIS) collects, stores and reports overall Navy manpower strength and personnel information. MAPTIS is managed by the Naval Military Personnel Command located in Washington, D.C. The second system is the Joint Uniform Military Pay System (JUMPS) operating at the Navy Finance Center, Cleveland, Ohio. The purpose of JUMPS is to use ADP to assist in the processing of payrolls and to use accrual accounting and automation to provide a financial reporting system for the Military Personnel, Navy appropriation. Plans are to collocate MAPTIS and JUMPS at NFC Cleveland in 1982.

(3) ADP Architecture

PASS Phase II (SDS) is an ADP system with distributed data processing and distributed data bases. See Exhibit B-1 for a conceptual flowchart of PASS Phase II (SDS) and Exhibit B-3 for a diagram of the system network. PASS Offices will have CRT terminals, such as the Data Speed 40/4, and printers linked to either Interdata 7/32 Mini-Computers or UNIVAC 1100 computers and associated data bases with CAL COMP 1035/235-2 disc drives.

Pass Phase II (SDS) Network



There are plans for 25 Personnel Support Activities (PSAs) and 152 Personnel Support Detachments (PSDs). Each PSA supports from two to sixteen PSDs.

Snap Ships are Mobile and Not Assigned to any One Specific PSA/PC.

Communications by Department of Defense Automatic Digital Network (AUTODIN II) Except for Naval Activity PSD Communications

EXHIBIT B-3

These computers, called field host processors (FHPs), will be at Processing Centers (PCs) under the functional control of the PSAs. Most processors will be located at Navy Regional Data Automation Centers (NARDACs), except where location does not make this feasible. In this case, the processors will be located within or close to the PSA. The function of a NARDAC is to provide data processing services for all Navy activities within a specified area. The terminals to be purchased will not have processing or storage capabilities. The exact equipment for PASS Phase II SDS is not known at this time. It will be purchased as a result of a competitive procurement. The equipment discussed in this System Description is the equipment used for purposes of the cost/benefit study.

The FHPs will maintain pay and personnel data bases, process data resulting from pay and personnel transactions, process payrolls and interface with JUMPS and MAPTIS. Local data entry into the FHP will be by computer-assisted conversational mode of operation into a CRT terminal. Data entry procedures at the terminal are designed to allow an operator with virtually no ADP experience to operate the terminal. Certain batch procedures, such as payroll processing, will also be accomplished by the FHP.

PASS Phase II (SDS) requires an extensive telecommunications network capable of two-way communictions between the field level pay and personnel offices, the FHPs and the central sites in order to relieve the reliance upon mail, the present method of data transmission. The configuration will consist of dial-up/dedicated communication lines between the PASS Office and the FHP and between the FHP and the Headquarters Host Processor (HHP) at the central sites where the JUMPs and MAPTIS data bases are located. The Department of Defense Automatic Digital Network (AUTODIN II) is envisioned as the communications link. Various Data Speed 40/4 terminal controllers will be utilized. Field

files will be updated daily with both local and central information. Central files will also be updated with information transmitted daily from the field.

(4) Functions

PASS Phase II (SDS) is being designed to support the following functions. Panel numbers listed after functional statements indicate the panel in Exhibit B-4 which provides a flowchart to support gaining an understanding of the functional statements and other descriptions contained within this System Description.

- Strength (Manpower) Accounting and Reporting - Local activity gains, losses and other changes which affect Navy strength to MAPTIS (Panel 1)

- Personnel and Pay Data Change Reporting - Local activity personnel transactions to MAPTIS. Those which affect pay to JUMPS (Panel 2)

- Maintenance of Pay Log and Payday Processing System - At PASS Office, maintain individual pay and personnel history and, at the Processing Center, automatically compare local pay record to JUMPS Leave and Earnings Statements prepared at NFC, Cleveland. PASS Offices will produce payroll checks or electronic fund transfer notices (Panel 3). This is a conceptual description of the payroll function which has not yet been definitized.

- Access to Personnel Record and Pay Record - At PASS Office by terminal (Panel 4)

- Disbursing Officer Summaries - Prepare aggregations of pay information for reconciliation and reporting (Panel 5)

- Standard Pre-defined Reports - Provide standard personnel reports for local activities (See Section 8 for a discussion of products) (Panel 6)

- Retired Pay Reporting - At service member's retirement, PASS Office forwards additional data required for processing retired pay to NFC, Cleveland (Panel 7)

- Projected Assignment Notification - Notification of change of duty station orders from NMPC to PASS Office (Panel 8)

- Transaction Tracking - PASS Phase II(SDS) monitors transactions until completed (Panel 9)

- Ad Hoc Queries - Terminal inquiries at the PASS Office by individuals or by local commands for aggregated information using logical relationships. Hard copy reports can also be provided. Note: This capability should also be of assistance to an auditor (Panel 10)

- Transportation Reservations - Request and receive overseas transportation reservations. Store and provide overseas and CONUS passenger transportation information (Panel 11)

- Government transportation Request (GTR) Accounting - Monitor custody or issuance of GTRs (Panel 11)

- Data Base Synchronization - Allows for the reconciliation of headquarters' and local data bases to one another (Panel 12).

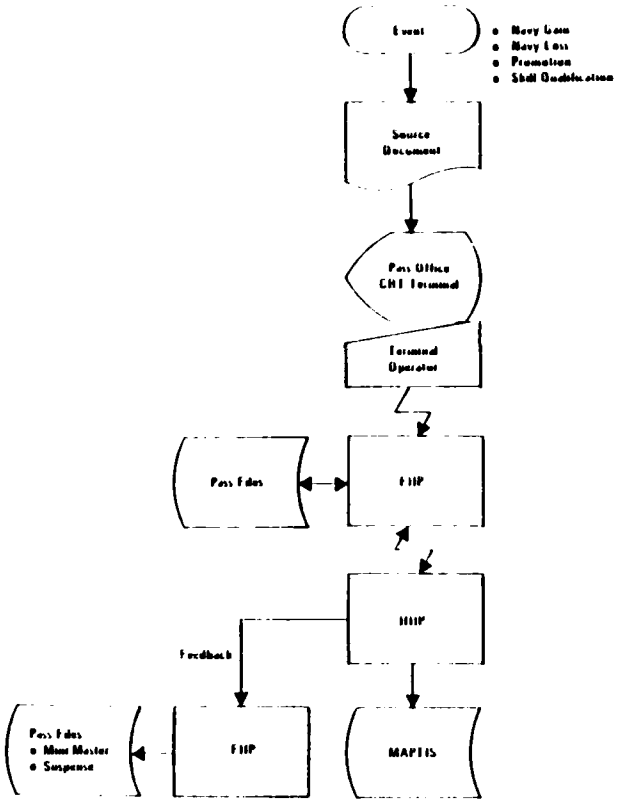
(5) PASS Phase II (SDS) Development Phases

In order to build the above functions into PASS Phase II

Functional Flowcharts

PANEL 1

STRENGTH ACCOUNTING



PANEL 2

PERSONNEL AND PAY DATA CHANGE REPORTING

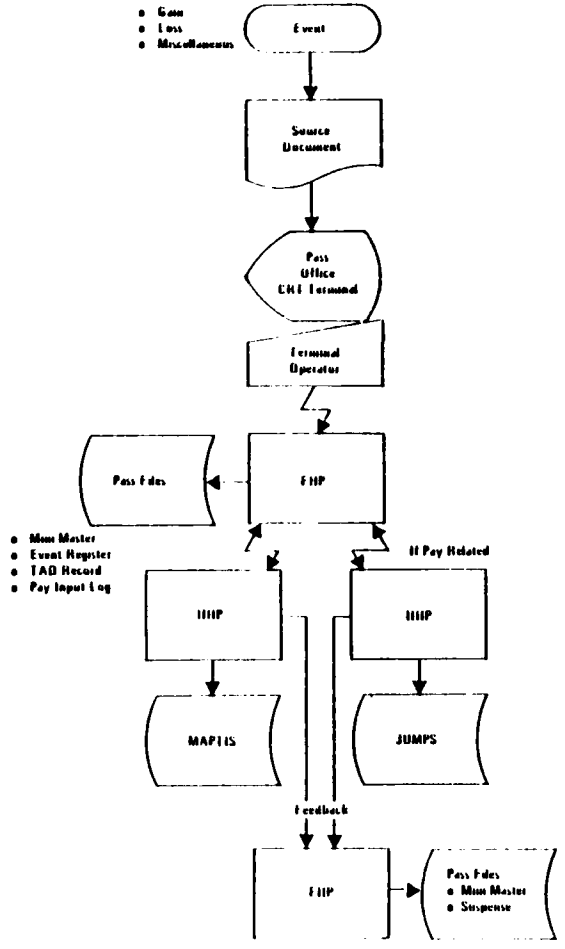
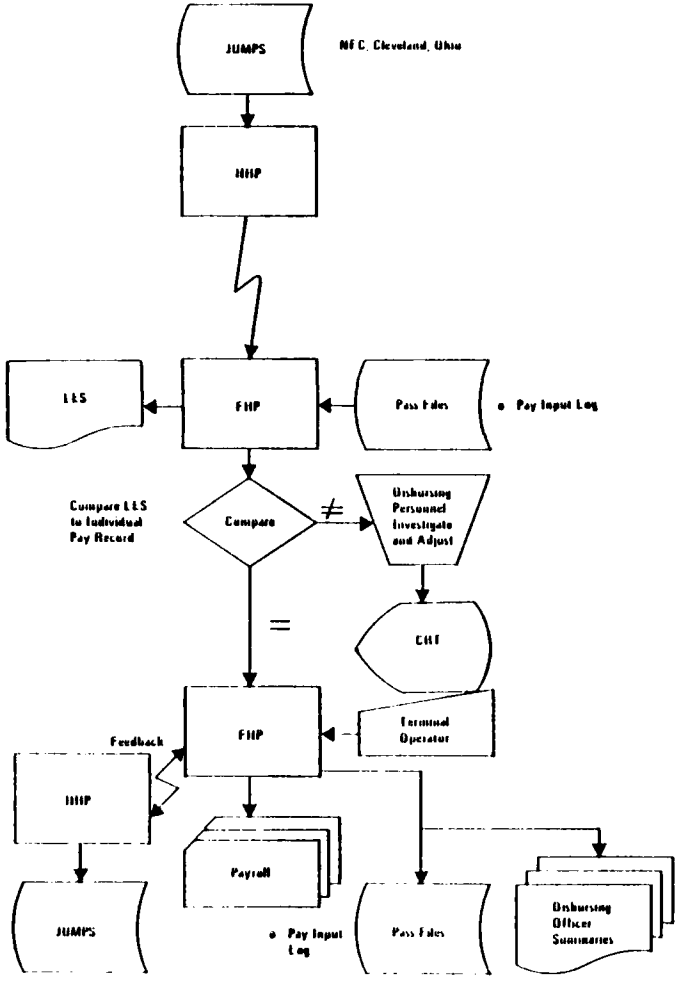


EXHIBIT 3-4

Functional Flowcharts

PANEL 3

MAINTENANCE OF PAY LOG AND PAYDAY PROCESSING SYSTEM



PANEL 4

ACCESS TO PERSONNEL AND PAY RECORDS

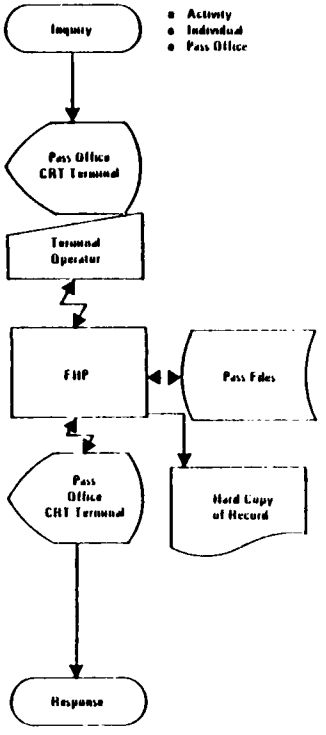
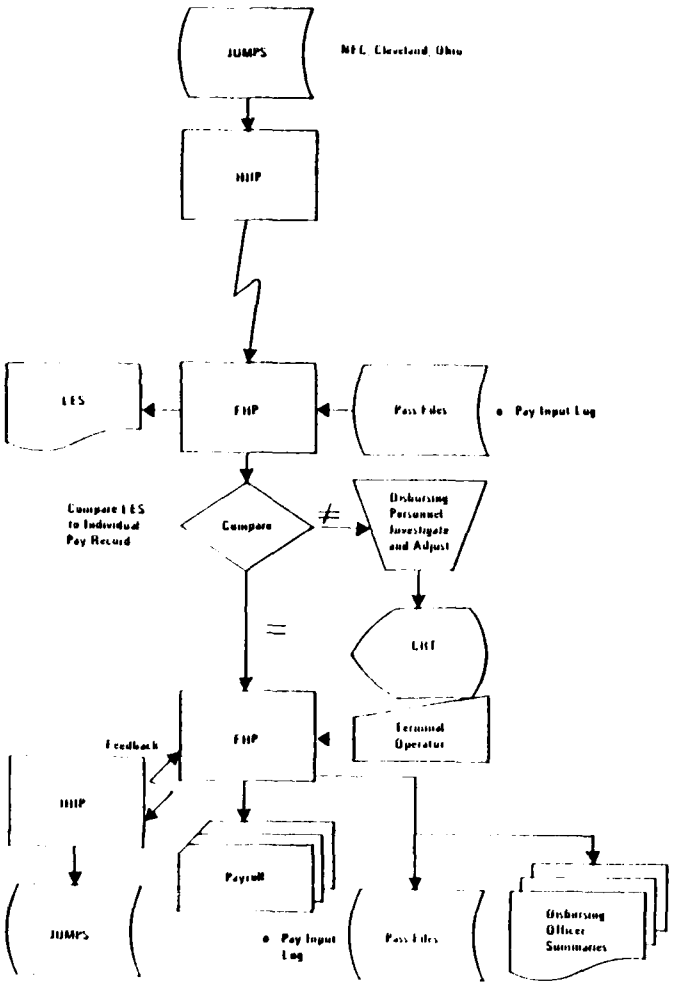


EXHIBIT 3-2

Functional Flowcharts

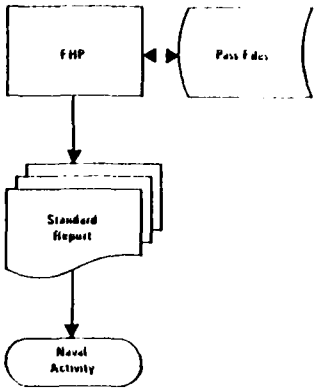
PANEL 5

DISBURSING OFFICER SUMMARIES



PANEL 6

STANDARD PRE DEFINED REPORTS



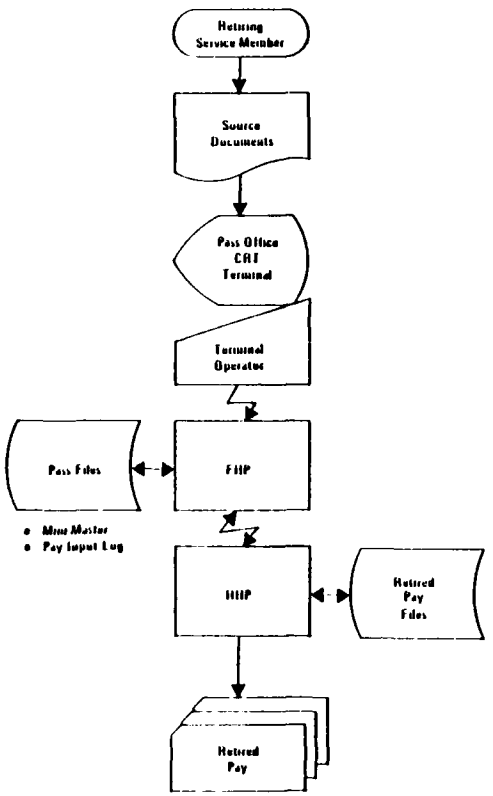
Page 3 of 6

EXHIBIT 3

Functional Flowcharts

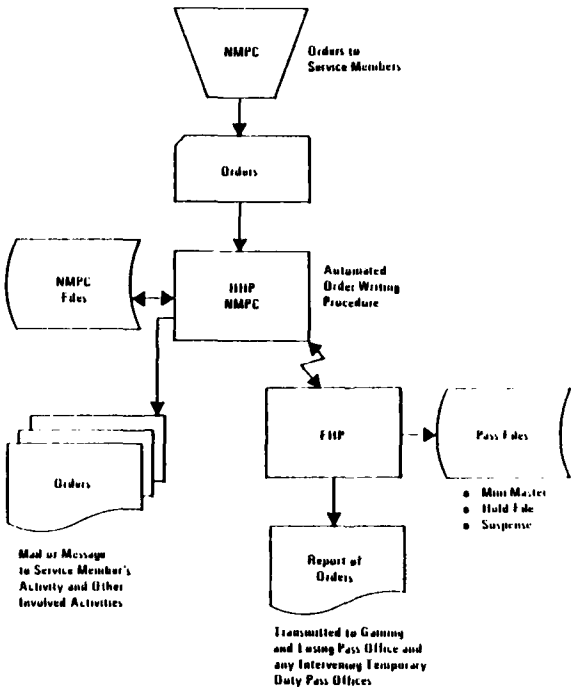
PANEL 7

RETIRED PAY REPORTING



PANEL 8

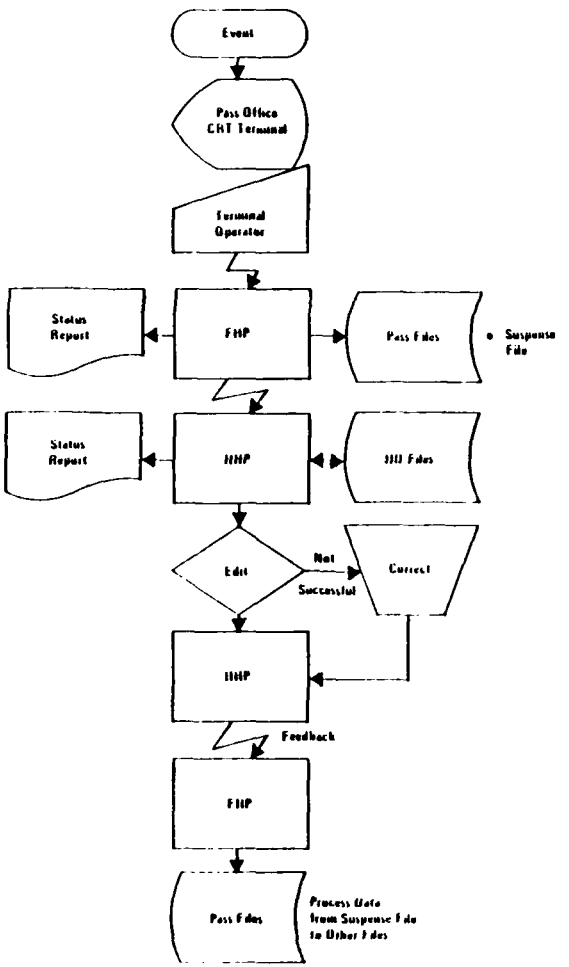
PROJECTED ASSIGNMENT NOTIFICATION



Functional Flowcharts

PANEL 9

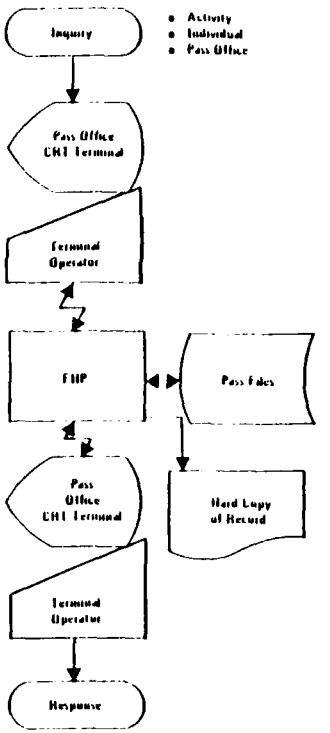
TRANSACTION TRACKING



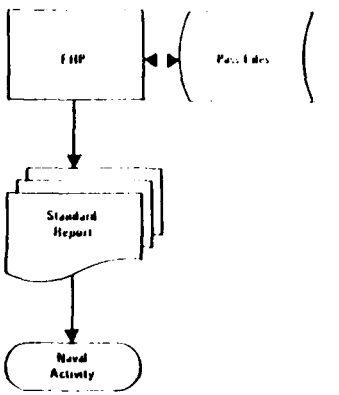
PANEL 10

AD HOC QUERIES

ACCESS TO PERSONNEL AND PAY RECORDS



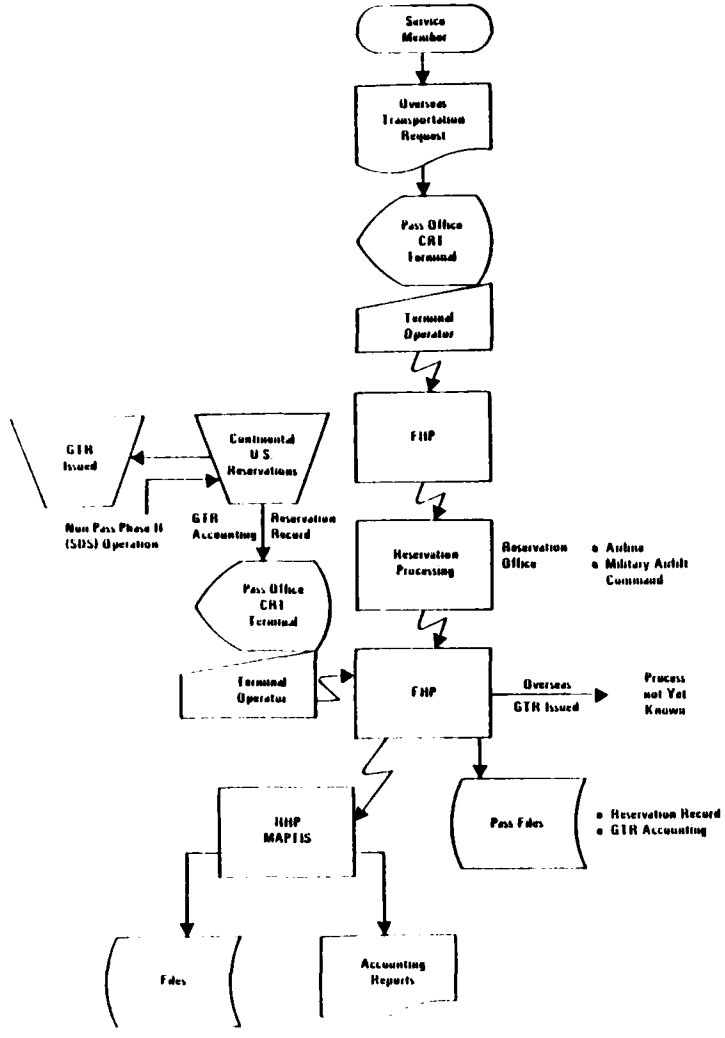
STANDARD PRE DEFINED REPORTS



Functional Flowcharts

PANEL 11

TRANSPORTATION RESERVATIONS



PANEL 12

DATA BASE SYNCHRONIZATION

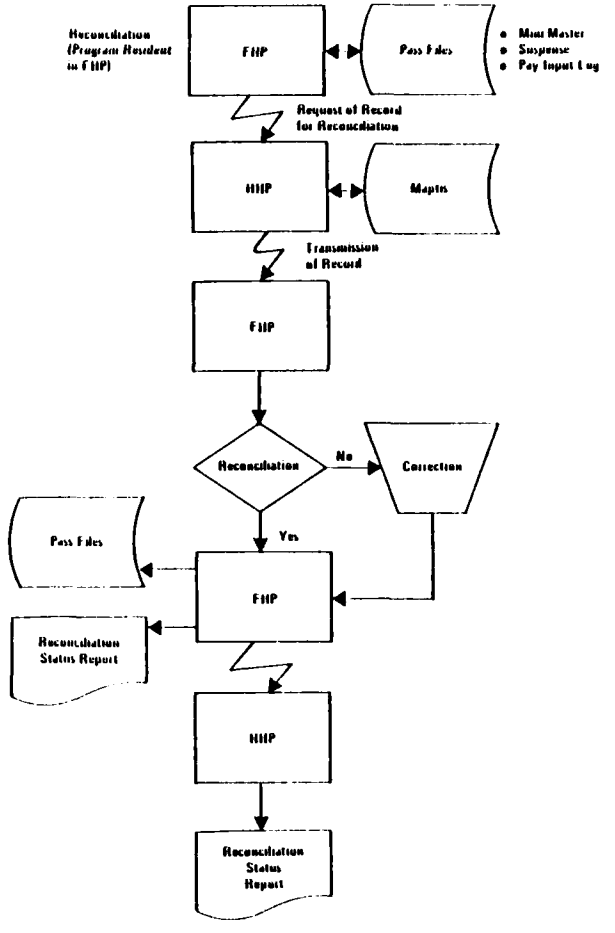


EXHIBIT 3-4

(SDS), a four phase development cycle has been selected. These phases are:

- Phase 1 - Prototype development and implementation at Personnel Support Branch Office, Crystal City, Arlington, Va. scheduled for completion by March, 1981. This phase will include officer and enlisted gain and loss and miscellaneous events. After evaluation and acceptance, which is to be completed by July, 1981, the prototype will be installed in other selected CONUS sites. This system is currently in this phase of development.

- Phase 2 - This phase will add personnel reports and forms not included in Phase 1, ad hoc queries and standard reports. Products of this phase will be tested at prototype sites. On completion of testing, 19 CONUS PSAs and 121 PSDs will receive the capabilities. User testing is forecast for completion by June, 1982.

- Phase 3 - The third phase will add payroll processing capabilities. After prototype site testing, CONUS activities will receive the package.

- Phase 4 - This phase consists of the addition of family separation allowance support and overseas unique functions, such as those pay allowances which personnel stationed overseas would receive and those processes which address dependents located overseas. Testing will be conducted at a prototype site and then implemented within CONUS. The last part of this phase will be to install the complete PASS Phase II (SDS) at planned overseas sites. An evaluation of the overall PASS effectiveness is projected for completion by the end of 1985.

1A. SUBSEQUENT PLANNING

Subsequent to the preparation of this PASS Phase II (SDS) System Description, certain portions of the plans for PASS Phase II (SDS) were changed. The purpose of this section is to outline the modified plans. These changes were made in order to export PASS Phase II (SDS) to the field as the Navy pay and personnel system one year earlier and to provide increased capabilities in the field at an earlier time. While these changes are significant in terms of their effect on the PASS Project, we believe they are adequately outlined herein and the use of this section, in conjunction with the remainder of this System Description, will provide the reader with an adequate understanding of the PASS Phase II (SDS) system. We feel the changes, as outlined below, are basically scheduling changes and have not significantly comprised the integrity of this system description.

The essence of the change is that SDS Phases 1 and 2 will be combined into one development phase called Release 1. Release 1 is scheduled for implementation in January, 1982. At that time, it will be mated with "Brand Y" mini-computers and a prototype test conducted. Major interim products are scheduled as follows:

- System Design - September, 80
- Programming Completed - September, 81

In addition to those pay and personnel functions planned for SDS Release 1, Naval Reserve pay and personnel functions will be either included in Release 1 or introduced shortly thereafter as Release 1A.

SDS Phase 3 (payroll processing) will become Release 2 and its implementation rescheduled. In the same manner, SDS Phase 4 will become Release 3.

2. SYSTEM DOCUMENTATION

The purpose of this section is to discuss the documentation which was reviewed in order to obtain information for this system description. A preponderance of the information required for this system description was obtained from documentation as there was no demonstration site available for observation.

PASS Phase II (SDS) is in an early stage of development and the documents provided for review reflect the early stage of development. The functional requirements for SDS Phase I are relatively firm, but new requirements and changes are being made in response to the ongoing planning and design process. Additionally, requirements and design specifications from NFC Clevland were not available at the time of this review. Information on SDS Phases subsequent to SDS Phase 1 were less detailed than the information for SDS Phase 1. In some cases this System Description can address only the concept of how a function in a subsequent phase will be performed as functional requirements are not yet available. The documentation which we reviewed was written during the past two years and, like most ADP system developments, mirrors the changes which occurred during this period. We have accomodated this change process by giving more emphasis to the later documents and by having a working draft of the System Description validated by members of the PASS Project Office.

The following documents were reviewed in order to obtain information on PASS Phase II (SDS):

- Automated Data System (ADS) Development Plan
- PASS Management Plan
- Prototype Functional Requirements

- Standards for Program Specifications
- Officer Loss Event Program Specifications
- Gain Package Requirements
- Processing Scenarios.

Other documentation which will be available in the future consists of:

- Functional Descriptions
- Detailed Requirements Packages
- Subsystem Specifications
- Program Specifications
- Users Manual

3. SOURCE DOCUMENTS AND INPUT PREPARATION

A major reason for developing PASS Phase II (SDS) is to provide to headquarters level managers accurate and timely information on pay and personnel transactions. These events will be stored in local data bases, transmitted to the headquarters' data bases and processed within all data bases so that pay and personnel records affected can reflect the changes. Source documents reflecting pay and personnel actions which are to be entered into SDS will be prepared by the service member's activity or the PASS Office. A representative of the command will sign the document, thereby authorizing it for entry into PASS Phase II (SDS). If not filled out at the PASS Office, the document will be forwarded to the local PASS Office for processing. Copies of the documents were not available at the time this System Description was written. The source documents will be redesigned from the present OCR forms.

The prototype system under development for SDS Phase I is being designed to reflect certain personnel transactions which will be recorded in PASS Phase II (SDS). The transactions are discussed in a later paragraph of this section. A complete list of events which require entry into SDS, and which will be covered by applications of subsequent SDS phases, is not available, however, this list can be projected from an inventory of forms presently used for pay, personnel and passenger transportation functions matched against an understanding of the objectives and functions of PASS Phase II (SDS). It is estimated that the categories of transactions listed below will be used to generate specific events for entry into SDS.

- Pay

  - Pay and allowance transactions

- Pay Allotments

- Payroll Processing

. Personnel

- Change in status

- Leave

- Discipline

- Reserve personnel matters

- Education and training

. Passenger Transportation

- Application for transportation

- Confirmations of transportation

- GTR issuances

- Overseas Passenger Reservations.

A definitive review of system input events is possible, at this time, only for SDS Phase 1 events due to the stage of development of PASS Phase II (SDS). During the initial prototype phase, officer and enlisted gain, loss and miscellaenous events are being developed. A gain event is an event in which there is a receipt of a service member at an activity and/or a gain in the number of personnel in the Navy, overall. A loss event is one in which there is a loss of a service member to an activity and/or a loss to the Navy. Miscellaneous events

are those which change data elements of a service member's personnel record. The data elements changed are not those which would be changed as a result of a gain or loss event. These categories of events are a portion of all the transactions which PASS Phase II (SDS) will eventually process. There are 40 gain events, 39 loss events and 24 miscellaneous events which are now being programmed. Examples of the important categories of transactions which will be reported are:

- Gain Events
  - Activity gains of personnel
  - Navy personnel strength gains
  - Temporary Additional Duty personnel gains or returns therefrom
  - Failure of personnel to report
  - Corrections of data errors or erroneously submitted gains
  - Changes in status from enlisted to officer
- Loss Events
  - Activity loss
  - Release from active duty
  - Departure on Temporary Additional Duty
  - Absent personnel

- Corrections of data errors or erroneously submitted losses

. Miscellaneous Events

- Changes in the data submitted on an individual such as social security number, ethnic data, collateral duty assignments and occupational codes

- Report of preliminary retirement data

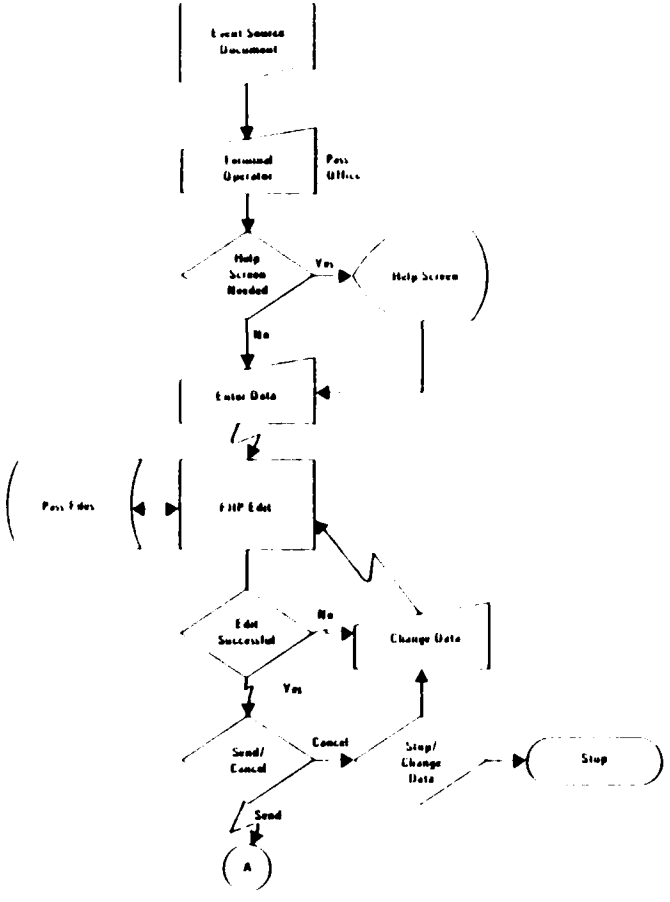
- Changes in active duty obligation.

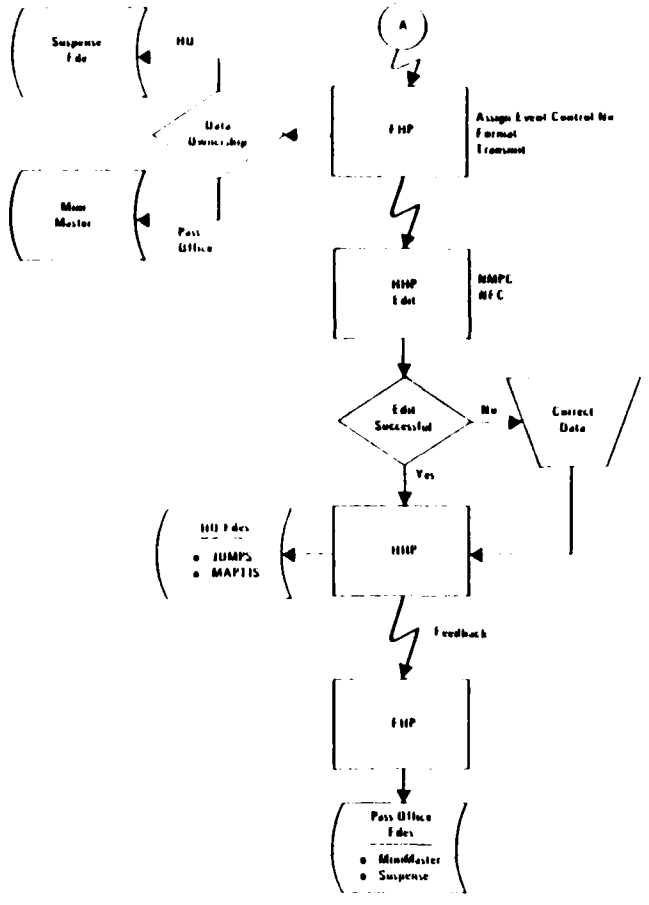
To obtain an idea of the composition of each of the individual events, the following details from the Functional Description of G01, Officer Activity Gain, is provided as an example.

> GAIN EVENT G01. The purpose of the G01 event is to report an officer's initial arrival at his permanent duty station or temporary duty station. This event is not used to report an officer's arrival at a temporary additional duty (with personal financial record) station. The G01 transaction results in the system-generation of a G8 Transaction Code to the Naval Military Personnel Command and a reporting endorsement to orders to the Navy Finance Center, Cleveland.

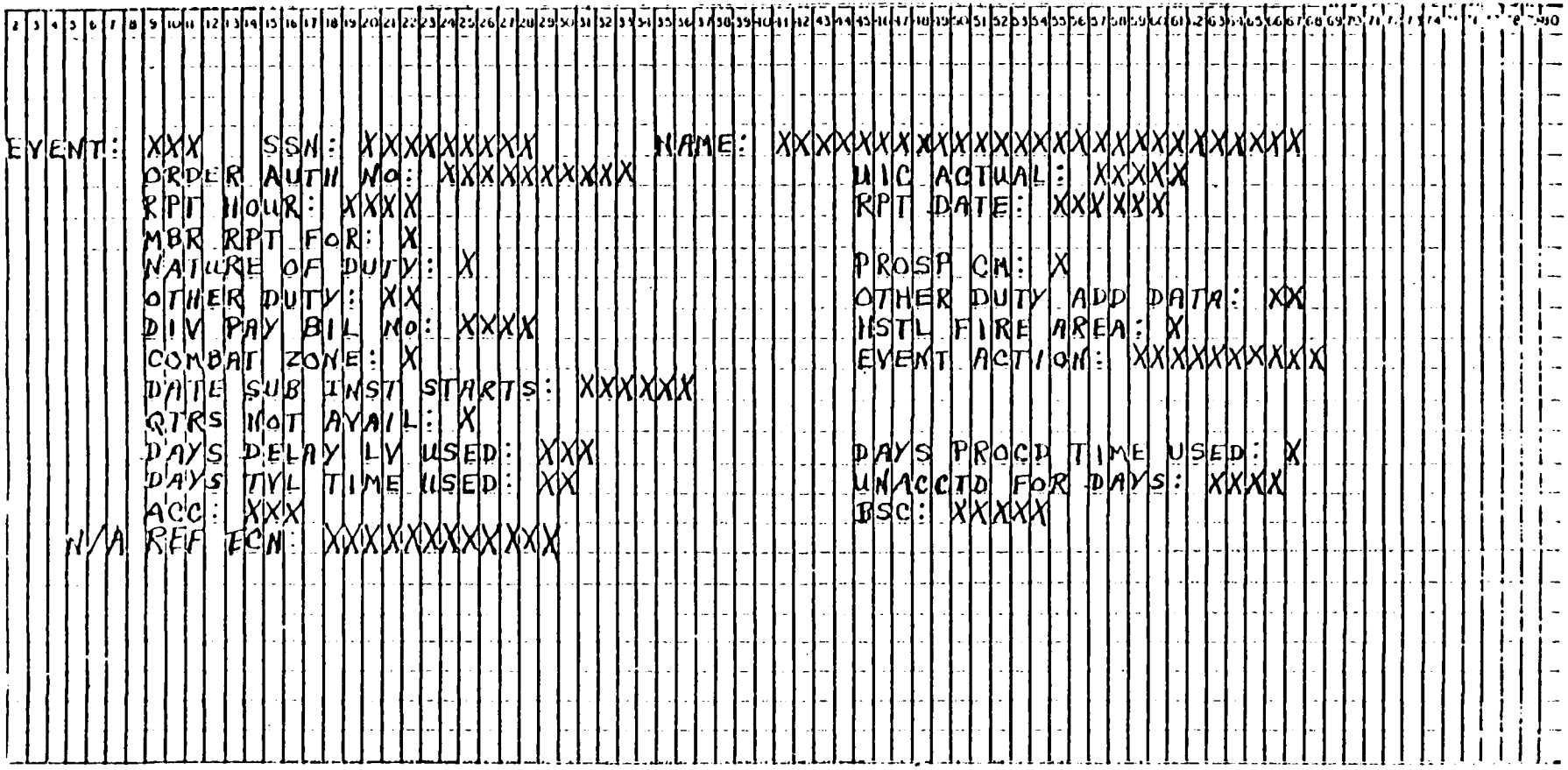
When a terminal operator in a PASS office receives a document authorizing a transaction, such as an officer gain, the terminal operator can, if the event number is known, call up the appropriate screens for data entry. Exhibit B-5 diagrams the procedures and flow of information of the data preparation and entry process. See Exhibit B-6 for an example of an event screen. If the event number is not known, an event menu can be used to obtain the proper event number. As the data is being entered, if help is needed, help screens may be

Data Flow and Edit Process for an Event





EVENT G01 - OFFICER ACTIVITY GAIN



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CHANGE ONE

EXHIBIT B-6

called up. Exhibit P-7 is an example of a help screen. After the data is entered on a screen, it is edited and cross-edited by the TIP. Section 5 discusses editing and validation. Upon correction of errors discovered by editing and validation, an Event Control Number (ECN) is assigned and the terminal operator is offered the option of transmitting or canceling the transaction. The ECN is a unique serial number assigned to the transaction which is used for reference, tracking and posting changes to the original event including changes to headquarters' records. The source document is annotated with the ECN. If the operator elects to transmit the transaction, processing occurs as described in Section 5(2).

SCREEN FORMAT
SYSTEM 007 SCREEN 018

```
         1111111111222222222233333333334444444444555555555566666666677777777778
1234567890123456789012345678901234567890123456789012345678901234567890123456789
--------------------------------------------------------------------------------
01.                                                                            .
02.                      NATURE OF DUTY (NATURE OF DUTY)                       .
03.                                                                            .
04. ENTER THE NATURE OF THE DUTY FOR WHICH THE MEMBER IS REPORTING FOR:        .
05.                                                                            .
06. ENTER  -IF                                                                 .
07.                                                                            .
08.   1     REPORTING FOR A REGULAR TOUR OF DUTY (REGULAR DUTY)                 .
09.   2     REPORTING FOR DUTY UNDER INSTRUCTION (INSTRUCTION)                  .
10.   3     REPORTING TO A MEDICAL ACTIVITY FOR TREATMENT (TREATMENT)           .
11.   4     REPORTING TO AN ACTIVITY FOR SEPARATION PROCESSING (SEPARATION)     .
12.   5     REPORTING TO AN ACTIVITY FOR CONFINEMENT (CONFINEMENT)              .
13.                                                                            .
14. IF MBR IS REPORTING FOR DUTY AS A PROSP CM THEN NATURE OF DUTY MUST BE BLANK.
15.                                                                            .
16. IF NATURE OF DUTY = 5 (SEPARATION) THEN DATE SUB INST STARTS, AUTH SEP RATS .
17. HOUR, AUTH SEP RATS DATE, MESS NOT AVAIL, QRTS NOT AVAIL, SHIP MESS QRTS CLSD,
18. SKED OVHL, AND DAYS PROCD TIME AUTH MUST BE LEFT BLANK.                    .
19.                                                                            .
20. IF NATURE OF DUTY = 3 (TREATMENT) THEN MBR RPT FOR MUST NOT = 1 (PERMDY) AND
21. DAYS PROCD TIME USED MUST BE LEFT BLANK.                                   .
22.                                                                            .
23.                                                                            .
24.                          ENTER NATURE OF DUTY: <                           .
--------------------------------------------------------------------------------
```

EXHIBIT B-7

4. Automated System Interfaces

The purpose of this section is to describe the interfaces between PASS Phase II (SDS) and the MAPTIS and JUMPS Systems. This interface is an important part of the system. It is through the interface that the Navy's Central pay and personnal accounting systems receive data on field transactions. This interface provides for the timely and efficient collection of data and transmission to the headquarters' data bases thereb overcoming the significant time delays in receipt of data which characterize the present OCR system. There is also a down flow of data from the MAPTIS and JUMPS data bases to the PASS Phase II (SDS) data bases maintained at the Processing Centers. Exhibits II-1 and II-5 depict the flows of data between the various ADP systems involved. The processing procedures to allow for interfaces are described in section 5.

(1) Output to JUMPS and MAPTIS

Each transaction which is entered into the Source Data System has a routine associated with it which is programmed to determine which external data bases will be updated with the newly entered information. For example, see panels 1 and 2 of Exhibit B-4. The routine may be written so that JUMPS, MAPTIS, both or neither receive an update. Most events designed during SDS Phase 1 are reported to at least one headquarters data base. The example of an officer gain event provided in Section 3 demonstrates a transaction which would be reported to both MAPTIS and JUMPS. Should transmission to JUMPS or MAPTIS be required, the transaction will be converted into the appropriate output format by the FHP.

The appropriate format is the same as that by which the

present OCR forms provide inputs to JUMPS and MAPTIS. This format is designated a Transaction Code (TAC) when transmitted to the HHP. (See Section 3 for the use of a Transaction Code in the Officer Gain Event). Automated PASS Phase II (SDS) telecommunications system network controllers will execute the transmission, acknowledgement and any required retransmission to PASS and JUMPS.

The method of input to JUMPS and MAPTIS described above, coupled with SDS Phase 1 reported events, fulfills the following functional requirements:

- Strength accounting reporting - MAPTIS files will be updated as to the numbers of NAVY personnel, numbers in each rate, rank, skill speciality and on board count in relation to requirements (See Panel 1 of Exhibit B-4)

- Personnel data change reporting - Updates MAPTIS to maintain the master personnel file of each service member (See Panel 2 of Exhibit B-4)

- Pay data change reporting - Updates to JUMPS of individual transactions affecting pay for the master pay record of each individual (See Panel 2 of Exhibit B-4)

- Retired pay reporting - Transmits the additional personnel information required by NFC, Cleveland to process an individual's retired pay (See Panel 7 of Exhibit B-4).

(2) Input from JUMPS and MAPTIS

In PASS Phase II (SDS), there are requirements for the down flow of information by telecommunications network from JUMPS and MAPTIS HHPs to PASS Phase II (SDS) FHPs which then process the

information into the local PASS data bases. See Exhibit B-1 for the concept of down flow and Panels 3 and 8 of Exhibit B-4 for functional flowcharts.

In MAPTIS, data will be formatted for SDS by a front-end processor, an Interdata 732. Within JUMPS, the conversion will be accomplished by the central computer with the Interdata 732 used only as a communications switch. Transactions planned for SDS Phase 1 implementation are primarily personnel management oriented with pay implications. Therefore, the specific down flow transactions, which are listed in the following paragraphs, are all originated at NMPC and flow from MAPTIS. During SDS Phase 3, extensive payroll functions will be added. At this time, NFC Cleveland will transmit pay data on the PASS Phase II (SDS) network. The individual Leave and Earnings Statement will be computed at NFC, Cleveland, using both headquarters and field provided data. After computation, the LES will be transmitted to the local Processing Centers on the PASS Phase II (SDS) network. At the Processing Center, it will be automatically compared to locally prepared pay computations and differences reconciled by disbursing personnel. As a result of the reconciliation and the payments made, feedback will be given to JUMPS at NFC Cleveland.

The SDS Phase 1 transactions originating from MAPTIS are:

- Projected activity personnel gains and losses are ordered by NMPC. Exhibit B-4, Panel 8 diagrams the transaction. NMPC uses an ADP orderwriting process. A product of this orderwriting process will be the transmission of the assignment transaction by PASS Phase II (SDS) network with a skeleton record for the local mini master file.

- File updates such as Projected Rotation Dates and Additional Qualification Designators (an employment qualification) are

NMPC originated data elements. Changes to these data elements may be requested by correspondence from Navy activities.

- Certain data elements, resident in the FHP, such as social security number and name, cannot be updated locally until MAPTIS records are updated. These data elements are written by the FHP to the suspense files at the same time they are transmitted to MAPTIS. When the feedback transaction message from MAPTIS indicates updated records, an update of local records will occur.

- Personnel loss due to orders is similar to projected personnel gain except that a local record will not be written.

- Synchronization, or data base to data base reconciliation, will be described in section 7.

In all the cases described above, data elements from JUMPS and MAPTIS will replace the respective data contained in the record.

The addition of the passenger transportation function will require the ability to transmit overseas transportation requirements from PASS Offices to reservation offices and confirmed reservations back to the local PASS Office.

PASS Phase II (SDS) indirectly receives input from ADP systems other than JUMPS and MAPTIS. Any of the data which is required for PASS data bases would have to be processed by MAPTIS and transmitted to PASS files.

5. DATA BASE

The purpose of this section is to discuss the files which are part of PASS Phase II (SDS) and the processing of data to and from these files. In order to accomplish this purpose, Section 5 has been divided into subsections:

- Files
- Update Processing Cycle
- Network
- Restart, Recovery and Back-up Capability

(1) Files

The files which are discussed are those files associated with SDS Phase 1. Subsequent phases will generate the requirement for additional files, and will also use those files created for SDS Phase 1. These files are updated on a real time basis for those data elements which the PASS Office controls. For those which are controlled by headquarters, update is on an as accomplished basis, anywhere from daily to three times per week. There are also files located at NMPC and NFC, Cleveland. These files are a part of the MAPTIS and JUMPS systems and will, therefore, not be discussed in this System Description.

The files associated with SDS Phase 1 and located at the Processing Center, are:

- Mini Master File

This file will contain a personnel record for every Navy person whose records are administered by the PASS Office and for those personnel who are ordered to report to the area. These records are the heart of the data base for SDS Phase 1. Within this file are several categories of records.

- Projected Gains Skeleton Records. These are skeleton records built from a minimum amount of information which is provided to the PASS office by down flow from NMPC when NMPC orders a person to the area.

- On Board Skeleton Records. These records are created for personnel who report in to the PASS Office and for whom Projected Gain Skeleton Records have not been created.

- Full Mini Master Records. After a gain event has been transmitted to NMPC, and successfully processed through MAPTIS, a Full Mini Master Record is built.

- Temporary Additional Duty Records. Records created for personnel who are assigned on temporary duty in the area.

The data elements contained in these files are those data elements which a personnel record would have, e.g., name, social security number, date of birth, and those unique to the Navy such as skill qualifications and projected month when orders should be received. Other examples of data elements are listed in Exhibit B-8.

Suspense File

This file is used to record all events forwarded to

Exhibit B-8

Data Elements

The below listed data elements represent a partial list of data elements which can be used to construct a pre-defined report or an ad hoc query for general information about a Navy activity

- Basic Orders Estimated Date of Loss - Indicates the prospective date of loss to the Navy or when a member is available for transfer
- Authorized Separate Rations - Indicates the authorization to receive separate ration payments
- Date of Rank - Indicates the date of the officer's present rank
- Dependents on Station Overseas
- Expiration Date of Active Obligated Service
- Estimated Date of Detachment - the date a service member will be detached from the present duty station.
- Ethnic Group
- Primary Navy Enlisted Classification Code - A job qualification listing.

headquarters. When feedback from the HHP indicates final disposition, the particular record will be deleted from the Suspense File. While in the Suspense File, the record can be obtained by interactive query.

- Event Register File

This file lists all events transmitted to a headquarters by either Event Control Number or Social Security Number. Daily and monthly reports of its records will be printed. The contents of the file may be deleted on a monthly basis or retained for historical purposes.

- Hold File

This file will allow the PASS Office to enter and store an event prior to its effective date, without transmitting the event to a headquarters. While in this file, the events can be retrieved, corrected, transmitted or deleted. They will not be machine edited until approved for transmission.

- Pay Input Log

All pay and personnel data elements which are required for the service member's pay account must be maintained on an automated file to be used by disbursing personnel.

- UIC File

This reference file is used to verfiy the validity of Unit Identification Codes (UICs). The UIC is a unique numerical identifier assigned to each naval activity. One of the data elements for the events programmed in SDS Phase 1 is a UIC.

- Miscellaneous Support Files/Tables

These files and reference tables will support pay and personnel edits. Examples are:

- Transaction Queue File - When a transaction contains the same data elements as a previous transaction which has not yet been accepted by JUMPS/MAPTIS, the second transaction cannot be transmitted until the first transaction is accepted. In this case, the second transaction is written to the transaction queue file.

- Pending Validation File. When released from the transaction queue file, a transaction is written to the Pending Validation File for batch processing through the edit parts of programs.

- Event Error File - This FHP file contains events which have errors discovered as a result of editing which have not yet been corrected.

- Feedback Impact File - This file is written by the HHP and transmitted to the FHP. It contains feedback from the HHP and non-SDS data.

- TAD Record

This file will maintain records for activities which order or receive personnel on temporary additional duty.

(2) Processing Cycles

SDS will operate on-line between PASS Offices and Processing Centers during the regularly designated work day at which time

PASS Offices will provide pay, personnel and passenger transportation services to customers. When the transaction data has been entered and edited, the terminal operator can elect to transmit the data. If this is done, the data is released to the network queue for batch transmission to the appropriate HHP(s). Programs within the FHP determine whether MAPTIS, JUMPS or both data bases will be updated and also format the event for transmission. At this time, those data elements that can be changed by PASS Office data entry are changed while those that can be changed only with HHP concurrence are written to the Suspense File. If the event contains data elements that are already awaiting HHP feedback, the record is written to the Transaction Queue file. Once feedback is received on the prior entry, the record is written to the pending validation file, edited, then batched for transmission. See Exhibit B-5 for a diagram of the flow of data.

For the eight hour period following the work day, files, which contain transactions, will be transferred from FHPs to the appropriate HHP. During this period, feedback on SDS transactions and data from non-SDS sources such as down flow transactions will be transferred from HHPs to the appropriate FHP. The following subsections describe the subsequent processing of data within the FHP and the HHP.

. HHP Processing

The data transmitted from the FHP to an HHP will be retained in queue until a MAPTIS or JUMPS update cycle processes it. The cycle of processing this data will range from daily to three times per week depending on processor availability. The information generated from field transactions will be processed into the records of individuals contained within MAPTIS and JUMPS and will also be processed to files which

aggregate data for financial and manpower accounting purposes. During HHP update, new data will be compared to that resident in the data base. Based on the logic of the application program, this new data will be either accepted or rejected and the status of the transaction data processed into an Accepts and Rejects File, and a Feedback Input File. The Feedback Input File from the HHP is transmitted to the appropriate FHP. The following are the processing actions the HHP can take:

- Accepted Transaction - All FHP transmitted data elements are accepted and the JUMPS/MAPTIS files are updated.

- Accepted Transaction with Change - All FHP transmitted data elements are accepted and the JUMPS/MAPTIS files updated, but some were modified by headquarter's data and these data elements will be changed by the FHP processing cycle to be described subsequently.

- Accepted Transaction - Previous Error - This indicates corrected data from a prior erroneous FHP submission and updated JUMPS/MAPTIS files. The corrected data elements will be changed within FHP files.

- Rejected - Transactions which are rejected and returned for correction at the Headquarters level.

- Accepted Transaction - Non-SDS Origin- This transaction originates from Non-SDS sources, such as the orders writing process which is a down flow transaction, and changes data elements in the FHP data base.

. FHP Batch Processing

FHP batch processing serves two purposes:

- Processing of feedback from HHPs for FHP file update

- Production of standard and system reports.

FHP batch processing will occur daily between midnight and the beginning of the customer service period. The Feedback Input File is read and those data elements for which the feedback input file indicates HHP acceptance and which are headquarter's controlled data elements, are written from the Suspense File to the Mini Master file. Also, non-SDS data is written to the Mini Master file.

After files are updated, standard and system reports are produced. Standard reports are produced by selection of the report through the on-line report option. Frequency of requirements for standard reports are not known at this time. See Section 8(2) for a listing of SDS Phase 1 standard reports. System reports are called for by the batch update program on a daily as-required basis and are listed in Section 8(6).

(3) Network

Telecommunications will be used to provide the interactive data entry capability between PSD's and NARDACs or other Processing Centers. Data exchange between Processing Centers and NMPC and NFC, Cleveland will also be accomplished by telecommunications network with terminal controllers and communications controllers. The system functional requirements call for an alternate telecommunications path as a back-up for the primary path. Either two dedicated paths or a secondary dial-up capability to meet the alternate path requirement will be acceptable.

(4) Restart, Recovery and Back-up Capabilities

System requirements are written to prevent the loss of automated data support to PASS Offices and to minimize the loss of data. Specific requirements are:

. Restart

- During a gradual shutdown, the system must stop accepting external input while continuing to run active work. When the system is restarted, all remaining work including input and output must be restarted.

- In the event of the abnormal job termination of batch processing, there will be checkpoints from which the job can automatically restart.

- In the event of lost communications, terminal operators will be able to resume processing at the last completed transmission if they reaccess the system within a certain time limit.

. Recovery

- If files are lost or damaged, files should be reconstructed from the most current backup files

- Batch processing input/output data must be recoverable

- Input/output errors should be detected automatically and recovery, such as trials of all paths, automatically initiated. Status information should be provided when unrecoverable input/output errors are detected.

Backup

- Each Processing Center must provide continuous support. A single loss should not deprive the system of processing capability. If one CPU is lost, all programs must be executable without recompilation

- Alternate telecommunications paths must be provided

- Backup should be provided for application data. Disc files should be dumped to tape daily and a log of changes should be kept for recovery purposes. A minimum of father and grandfather backup files should be retained

- Messages should be retained even though the host computer is not operating. Backup copies of mesages should be established.

6. System Edits and Corrections

The purpose of this section is to describe procedures for editing input data and for the correction of errors. This section also discusses the reconciliation which will occur between data bases. Reference to Exhibit B-5 will assist in the understanding of the discussion on edits and error corrections.

A design objective of PASS Phase II (SDS) is to write data entry programs which provide for error detection and correction at the source of the data entry. In order to meet this objective, validation programs contained within the application routine will perform syntax and relationship edits, with assistance from data files and tables, at the time data is being entered by the CRT terminal operator. A combination of error messages and HELP screens displayed during terminal data entry will assist the terminal operator in the correction of errors. Each event package has its own edit program and related error messages. If the terminal operator needs further assistance, a HELP screen can be called up. The HELP screen will provide the terminal operator assistance in entering the correct data. In all cases, events cannot be transmitted to headquarters data bases if the data has not passed local edit procedures. However, in the cases of an unprojected gain, local override will permit data transmission.

Edits performed during terminal entry are both single field and cross-field edits. Single edits are edits to determine the correct entry into a field. Some edits are performed by comparison of entered data to a table such as the UIC table. Cross-field edits are unique for each event and are dependent on the relationship between two fields. Examples of each type of edit are:

- Single field edit
  - Must be valid date data (YYMMDD) and not greater than today's date

- Must be a valid hour in correct format

- Must match various tables

. Cross-field edit

- If country = blank, the city, state and zip must be present

- If days travel time authorized is numeric and other duty = 17 days, travel time authorized must = 01 through 15

Errors which are detected result in an error message at the top of the screen and the display of the symbol "ERR" to the left of the incorrect entry. As discussed, at this point, HELP screens provide assistance to the operator in making corrections to the data. Another method of editing is to display each completed screen prior to transmission in order to provide the terminal operator with an opportunity to review the data prior to transmission. This is accomplished at the time that the operator is provided with a send/cancel option.

At the beginning of data entry, the operator enters the event number and the social security number of the person to be reported on. If there is no matching social security number in the files, an error message is displayed and the event cannot be entered.

Editing is also accomplished by a comparison of the Record Status Code against the gain or loss event selection at the beginning of data entry. If the gain or loss event is inappropriate, that is, it does not meet the conditions for the duty status of the person whose record is being changed as reflected by the Record Status Code, an error message is displayed and the event cannot be processed.

As discussed in section 4, the receipt of transaction data at one of the headquarters subjects the data contained in the event to edit at the headquarters. Feedback on the results of the edit is provided to the Processing Center and the PASS Office. Incorrect entries detected at headquarters are corrected at headquarters. These edits and those described for the local PASS Office are accomplished for those data elements which can be changed by the editing activity. Certain data elements, due to their nature, are locked and cannot be changed by the PASS Office; these can only be changed by headquarters. In accordance with the logic of the data processing operations, other data elements can be changed by the PASS Office. As for edits between headquarters, in the case of a difference, the requirements package to which the system is being designed will state which edit has priority.

7. Reconciliation

Reconciliation between field and headquarters' data bases is considered necessary to meet the PASS Phase II (SDS) objective of improving the quality of pay and personnel data. See Exhibit B-4, Panel 12 for a diagramatic presentation of the reconciliation procedure. Reconciliation procedures, although not yet finalized, will have the following characteristics:

- Ownership of data, i.e., field or headquarters, in terms of which can change the data elements, will be considered.

- Reconciliation should be automatic on a quarterly basis. Also, PASS Offices should have the capability of initiating reconciliation on an as required basis.

- Consideration of data elements in process should be allowed by the reconciliation process.

- FHPs wil receive reconciliation records from HHPs. The data elements will be compared. If there are no differences, a report stating that the reconciliation of the individual's record was satisfactory and the date of reconciliation will be prepared. If there are errors, they will be flagged for research and correction by PASS Office personel using standard data entry facilities.

- A daily report is provided to the PASS Office on the reconciliation status of records.

Reconciliation of JUMPS files at NFC Cleveland to local pay data will also be accomplished as part of payday processing support. Monthly, a JUMPS Leave and Earnings Statement will be prepared by NFC Cleveland and transmitted to the FHP. It is compared to locally maintained pay records and any discrepancies are identified for reconciliation by PASS Office disbursing personnel.

The concept of reconciliation is also served by the time-sequence of updating local files. Data entered at the local level is written to the suspense file until validated by headquarters and feedback provided after which the data is entered into the mini master file. This serves to keep both data bases in synchronization. Ownership of data elements, a concept closely allied to the time sequenced events of updating local files, helps to keep data bases synchronized. As described in section 4, headquarters owned data elements cannot be changed by PASS Offices.

Various reports on reconciliation, errors and feedback are prepared for headquarters.

The vigorous application of edits and data base reconciliations in evidence in the design of PASS Phase II (SDS) provides adequate insurance for the accuracy of data within and among data bases.

8. System Reports, Inquiry Capabilities and other Products

The purpose of this section is to describe the end result of PASS Phase II (SDS). This section is divided into the following subsections which are the categories of products available from the system.

- Input to Headquarters' Systems
- Reports to Naval Activities Being Serviced by the Local PASS Office
- Inquiries Concerning Individuals
- Down Flow Transactions
- System Generated Reports.

(1) Input to Headquarters' Systems

A primary reason for designing PASS Phase II (SDS) is to have accurate and timely information resident in the MAPTIS and JUMPS headquarters' data bases. The procedures for accomplishing this event reporting have been discussed in prior sections. Exhibit B-8 provides a partial listing of data elements which are contained in data bases. The information contained within these data elements will contribute toward the effective accounting for the Navy's overall personnel strength and Military Personnel, Navy obligations, accruals, expenditures and collections. Resident in these headquarters's data bases are the Navy's master personnel records at NMPC and master pay records at NFC, Cleveland for each Navy service member. See Exhibit B-4, Panels 1 and 2.

(2) Reports to Naval Activities Being Serviced by the Local PASS Office

PASS Offices will have the capability of generating reports for local activities being serviced. See Exhibit B-4, panel 6. These reports will contain data elements from the mini master records of the personnel assigned to the command. Reports can be generated on a periodic basis or on an as requested basis. Reports can be requested by using a menu of reports available or can be constructed on-line by the user from data elements such as those of Exhibit B-8 or by calling for specific records. The report can be received on-line or submitted for off-line production. Paper copies of on-line reports can be obtained. There are fifty two candidate reports. Standard reports that will be provided by SDS Phase 1 are:

- Personnel activity locator report - Report of personnel assigned to an activity

- Personnel projected rotation date - Lists date personnel can be expected to be lost to the command. There will be one report for officers and one report for enlisted personnel.

- Advancement eligibility - Reports those enlisted personnel eligible to be recommended for advancement

- Enlisted active duty obligation - Reports remaining service time of enlisted personnel

- Locator report - A listing of the personnel at an activity

A copy of the officer activity locator report is presented as Exhibit B-9.

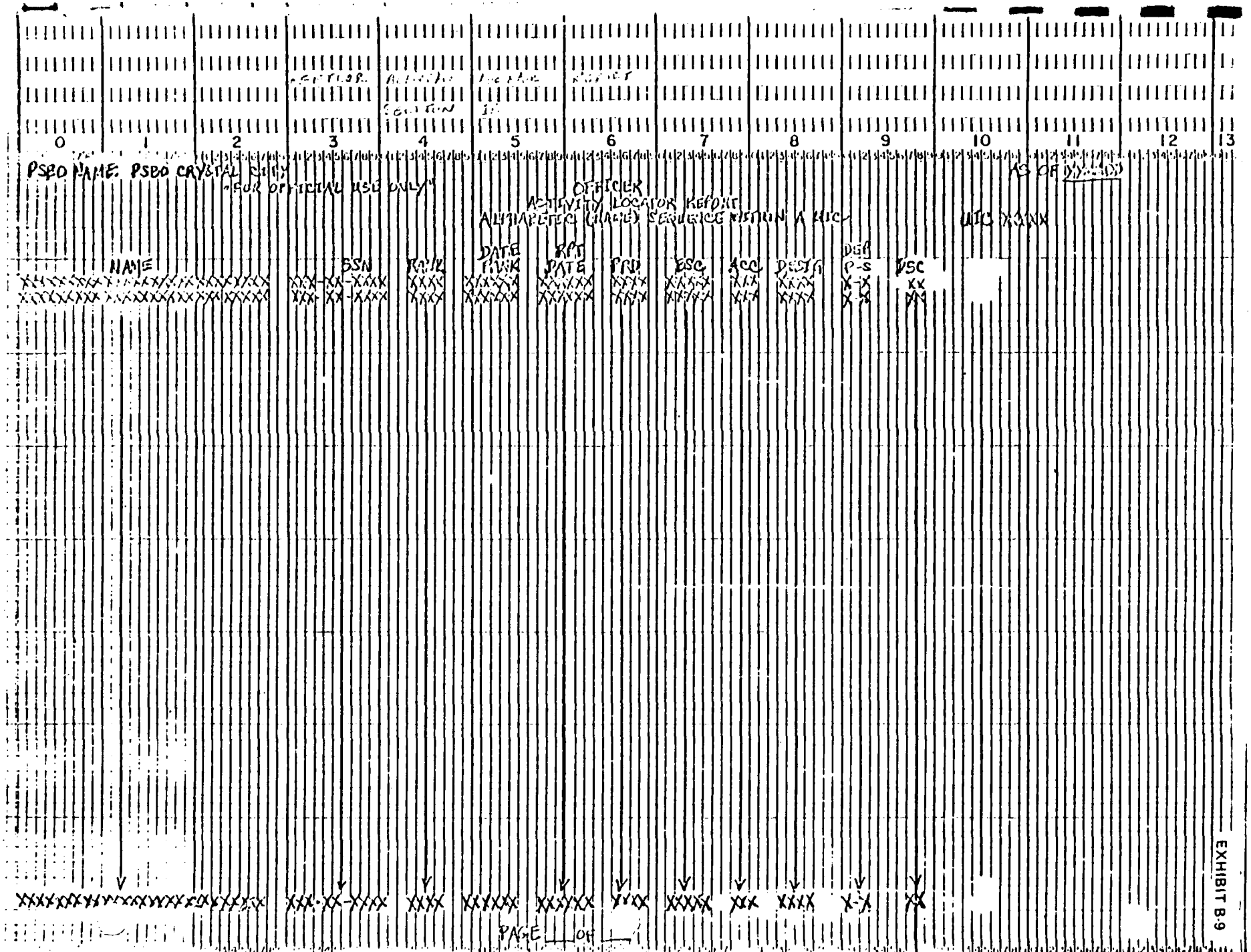
0 1 2 3 4 5 6 7 8 9 10 11 12 13
PSBO NAME: PSBO CRYSTAL CITY
"FOR OFFICIAL USE ONLY"
OFFICER
ACTIVITY LOCATOR REPORT
ALPHABETIC (NAME) SERVICE WISE
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EXHIBIT B-9

(3) Inquiries Concerning Individuals

In order to accomplish pay and personnel management, and in order to be responsive to customer service requirements, e.g., the registering of an allotment from pay, PASS Office personnel have a requirement for access to information on personnel. The most common procedure to meet the requirement will be to request the individual's pay or personnel record which will be displayed on the terminal. Paper copies of the screen display can be obtained. See Exhibit B-4, Panel 4.

(4) Down Flow Transactions

As discussed in section 4, transactions which flow from the headquarters through headquarters data bases to PASS Phase II (SDS) data bases are a product of the overall combined Navy ADP systems. SDS Phase 1 will include the capability to transmit information on personnel orders written by NMPC to PASS Offices and local commands. The capability will exist to notify the gaining and losing activities and up to three intermediate temporary duty stations. See Exhibit B-4, Panel 8 for an example. Other NMPC originated or approved changes, such as changes to the projected rotation dates of service members, will be down flow data.

In subsequent SDS phases, down flow transactions which will be programmed include:

- The computation of Leave and Earnings Statements by NFC, Cleveland and the transmission of them to PASS Offices.

- The transmission of changes to pay tables, UIC files, etc.

(5) Future Products

A review of the system documentation indicates that two major products will be designed into PASS Phase II (SDS). These are:

- Payroll Processing - NFC, Cleveland will transmit individual Leave and Earnings Statements to FHPs. A comparision by the FHP will be made to determine if local and headquarter's pay data is correct. Differences will be reconciled by local disbursing personnel. Checks will be printed by the FHP using batch processing under the control of disbursing officers. A by-product of this process will be feedback to NFC, Cleveland on payments to individuals. Normal disbursing reports will be written for disbursing personnel. Examples are:

  - Statement of Accountability - Summary totals of all receipts and expenditures

  - Check Register - List, by date, of each Treasury check issued

  - Report of Spoiled and Voided Checks.

Exhibit B-4, Panel 3 provides a flowchart of this operation.

- One function of the PASS Office is to transmit overseas passenger reservation requests to the appropriate scheduling activity, e.g., the Military Airlift Command or a commercial airline. Upon receipt of a confirmed reservation by the PASS Office, information on the reservation will be entered into the local PASS Phase II (SDS) records and also transmitted to the service member. A Government Transportation Request (GTR) will be provided the service member as a ticket and accounting for GTRs will be

accomplished by the FHP. A report, primarily for accounting purposes, will be sent to NMPC. Non-overseas passenger reservations will be entered into PASS Phase II (SDS) by other then automatic means. A flowchart of the application is depicted in Exhibit B-4, Panel 11.

(6) System Generated Reports

Certain SDS Phase 1 reports will be generated by the system in response to certain events or to provide processing status. These are:

- Expired Projected Release Date - This report lists personnel whose date of release from the Navy has passed, but for whom no notice of release was received by the system. Generated from the Hold File and the TAD file.

- Expired Duty Status Expiration Dates - Similar to Expired Projected Release Date, except this is for expired Temporary Additional Duty and is generated from the TAD Record.

- Overdue Events - List of overdue events from the Suspense File. There is also a similar report from the Hold File and the TAD File.

- Reconciliation Status Reports - Reports listing records successfully reconciled, date of reconciliation and records which did not reconcile and for which further investigation is required. A daily report is prepared for each PASS office.

- Event Listing - A daily list of events transacted from the Event Register File by Event Control Number.

- Expired Projected Gain - A report on personnel who have been

ordered to report and whose reporting date has passed. Data is taken from the Projected Gain Skeleton Records of the Mini-Master File.

- Error File Listing - A list of events entered by the terminal operator which have uncorrected errors.

- Prospective Assignment Notice - A list of personnel for whom notification of orders assigning the personnel to the serviced activity has been received.

- Feedback Report - A list of feedback transactions received from MAPTIS and/or JUMPS.

- Officer and Enlisted BUPERS Report 1080-11- A listing by activity and by PSD of personnel assigned.

- Retained Pay Transmission Log - A log of transmitted transactions which affect pay.

LIST OF ACRONYMS

ADS PLAN	-	Automated Data System Development Plan
AUTODIN II	-	Automatic Digital Network II
CONUS	-	Continental United States
CPU	-	Central Processing Unit
CRT	-	Cathode Ray Tube
ECN	-	Event Control Number
FHP	-	Field Host Processor
GTR	-	Government Transportation Request
HHP	-	Headquarters Host Processor
HQ	-	Headquarters
JUMPS	-	Joint Uniform Military Pay System
LES	-	Leave and Earnings Statement
MAPTIS	-	Manpower, Personnel and Training Information System
NARDAC	-	Navy Regional Data Automation Center

NFAC	-	Navy Finance and Accounting Center
NFC	-	Navy Finance Center
NMPC	-	Naval Military Personnel Command
OP-01	-	Deputy Chief of Naval Operations (Manpower, Personnel and Training)
PASS	-	Pay/Personnel Administrative Support System
PC	-	Processing Center
PSA	-	Personnel Support Activity
PSBO	-	Personnel Support Branch Office
PSD	-	Personnel Support Detachment
SDS	-	Source Data System
SNAP	-	Shipboard Non-Tactical ADP Program
TAC	-	Transaction Code
TAD	-	Temporary Additional Duty
UIC	-	Unit Identification Code

Appendix C.
System Surveys

APPENDIX C

SYSTEM SURVEYS

The purpose of this Appendix is to summarize information on the distributed systems identified by the Naval Data Automation Command for possible further review during our field work. The Naval Data Automation Command was the primary source of the information. Supplemental information was obtained from functional managers when needed to complete the survey.

1. System Information Obtained

In order to evaluate the distributed systems under development within the Navy, survey information was obtained on each system identified as a distributed system by the Naval Data Automation Command. Our purpose in obtaining this information was to select for further study certain systems which best fit our project objectives.

Below we present the types of information we obtained on each system and a brief explanation of each category.

- TYPE OF SYSTEM

  A brief description of the principal type of data which the system processes, e.g., financial, logistical, supply, informational, etc. The type of data processed is indicative of the level of internal control needed.

- SYSTEM DESCRIPTION AND OBJECTIVES

  This category briefly states the basic purpose of the system and describes the system and its distributed characteristics.

- SYSTEM STATUS

  This item indicates the development status of the system in terms of life cycle management stages of development. A graphic overview of the development status of the systems reviewed is provided by Exhibit C-1.

- DESIGN AGENCY

  Here we identify the agency which is designing the system or the agency performing the duties of a functional manager, that is managing other organizations responsible for the system design.

- USER AGENCY

  Here we identify the agency or the agencies which will receive the products of the data processing system under development.

- LOCATION OF DEMONSTRATION SITE

  This item identifies the command and physical location of the systems under review.

- DOCUMENTATION AVAILABLE

  Any pertinent documentation available at the Naval Data Automation Command is listed under this caption.

The remainder of the appendix provides a synopsis of the information obtained for each candidate system surveyed.

Development Status of Navy Distributed Systems

Life Cycle Event / System	Mission Analysis/ Project Initiation	Milestone 0 Approval	Concept/ Development	Milestone I Approval	Definition/ Design	Milestone II Approval	System Development	Milestone III Approval	Deployment/ Operation
IDA	[redacted]								
PASS/SDS	[redacted]								
EFD/MIS	[redacted]								
PWC	[redacted]								
SPLICE	[redacted]								
NALCOMIS	[redacted]								

NOTE: SNAP not included as it is a procurement of computers which will emulate the computers presently in place.

EXHIBIT C-1

Integrated Disbursing and Accounting (IDA)

Type of System: Financial

System Description and Objectives:

Reflect accounting status of financial transactions from commitment to disbursement and provide financial status to headquarters. Future plans include a disbursing capability. There are two actual systems. One is in prototype status at the Navy Regional Data Automation Center (NARDAC), San Diego and is being designed to support the Navy shore establishment. The other, Naval Education and Training Financial Management System (NETFMS), is operational at the Chief of Naval Education and Training (CNET) HQ, but has not yet been converted to provide support to the fleet, the purpose for which it is intended. The systems are to be on-line systems with remote inquiry and data processing and report generation at a number of satellite locations. Accounting information will flow upward through the Navy's financial management structure

System Status:

(1) Shore: Prototype running. Prototyping scheduled to be completed in May, 1980.

(2) Fleet: System operational for Naval education and training requirements, but has not yet been converted to meet overall Navy needs.

DESIGN AGENCY

(1) Shore: Fleet Material Support Office (FMSO), Mechanicsburg, PA.

(2) Fleet: CNET, Pensacola, FL

User Agency: Comptroller of the Navy, ATLANTIC Fleet, PACIFIC Fleet, other Major Claimants.

Location Of Demonstration Site:

(1) Shore: NARDAC, San Diego, CA

(2) Fleet: CNET, Pensacola, FL

Documentation Available

Automated data systems plans (ADS Plans), system design, system specifications, functional specifications, economic analysis and equipment requirements.

Shipboard Non-Tactical ADP Program (SNAP)

Type of System

Dependent on individual ship's mission and requirements. Will have financial, supply, personnel, maintenance and local unique requirements.

System Description and Objectives

This system replaces the present shipboard computer system (AN/UYK 5 computer) in order to accomplish the functions described above. The system is a distributed system and is self-contained on each ship. Each system has several mini-computers, various terminals, distributed data management and a network configuration. The system will interface with the Pay and Personnel Administrative Support System Phase II (Source Data System) (PASS Phase II (SDS)) and the Naval Aviation Logistics Command Management Information System (NALCOMIS).

System Status

First hardware acquisition is expected in FY 1982. This computer will emulate the AN/UYK 5 presently installed on board various Navy ships.

Design Agency

Naval Sea Systems Command (NAVSEA), Washington, DC and FMSO, Mechanicsburg, PA.

User Agency

Atlantic Fleet and Pacific Fleet.

Location of Demonstration Site

AN/UYK 5 presently on various Navy ships.

Documentation available

ADS Plans, various procurement documents.

Pay and Personnel Administrative Support System Phase II (Source Data System) (PASS Phase II (SDS))

Type of System

Personnel and pay functions.

System Description and Objectives

PASS reports personnel and pay transactions for Navy personnel. This system is designed to replace an optical character recognition system which has high error rates and has experienced long delay times. The master files at the Navy Military Personnel Command and the Navy Finance Center will be updated from the field PASS offices. An update of master files at Headquarters will be provided by CRT terminal data entry. The system is being designed in four phases, each of which includes various pay and personnel functions. PASS Phase II (SDS) interfaces with the Joint Uniform Military Pay System (JUMPS) and the Manpower, Personnel and Training Information System (MAPTIS) and, possibly, with SNAP.

System Status

Concept approval (Milestone I/ADP Plan) completed. Statement of functional requirements and system specifications for the first of four phases has been completed. Detailed design has begun.

Design Agency

Chief of Naval Operations Staff (OP-01), Washington, D.C.

User Agency

All major claimants.

Location of Demonstration Site

Not yet installed at a prototype or operational location.

Documentation Available

ADS Plan, functional description, system specifications.

Engineering Field Division Management Information System (EFD/MIS)

Type of System

Financial, logistics

System Description and Objectives

This system is designed to provide Military Construction, Navy appropriation accounting, construction status and shore facility planning support. The Naval Construction Battalion Center has a mainframe connected to 19 non-intelligent terminals at Engineering Field Divisions (EFD) and the Naval Facilities Engineering Command (NAVFAC). The planned system is designed to replace the present terminals with intelligent terminals which have the capability for source data automation, data storage and report generation.

System Status

Beginning acquisition procedures for terminals and beginning sytems development. Most of the programming will be accomplished after terminals are obtained.

Design Agency

NAVFAC, Washington, DC.

User Agency

EFDs, NAVFAC

Location of Demonstration Site

Present Non-intelligent terminal system - Naval Construction Battalion Center, Port Hueneme, CA

Documentation Available

Request for Proposal with system specifications.

Public Works Center Management Information System (PWC MIS)

Type of System

Financial and logistics supply

System Description and Objectives

This system is to provide Navy Industrial Fund accounting and billing, production control, family housing management and materials inventory for Navy Public Works Centers. Each PWC system has four modules. Each has its own mini-computer. Modules do not "talk" to one another on-line, but discs from one module can be carried to other modules to provide data bases.

System Status

Approaching milestone II (in this case design and acquisition approval). There is a test machine which is running a part of one module. After milestone II approval, five suites of hardware will be acquired for a one year test. Expect system to be operational FY 82-84.

Design Agency

NAVFAC, Washington, DC

User Agency

Navy Public Works Centers

Location of Demonstration Site

PWC, San Diego, CA. Test machine running a part of one module.

Documentation Available

ADS Plan. ADP system specifications are expected to be completed by February, 1980.

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System Stock Point Logistics Integrated Communications Environment (SPLICE)

Type of System

Supply/Logistics, financial. Includes inventory, transportation, warehousing, material management and household goods.

System Description and Objectives

This system is designed to provide the communications and networking to bring together the various systems which serve the functions listed above into a standard teleprocessing network. SPLICE provides standardization to the teleprocessing of data so that various systems, in different stages of development, will be able to interact. The system will consist of mini-computers in a cluster around a main computer to handle interactive processing and to process data at 20 sites including Navy Regional Data Automation Centers (NARDACs), Naval Supply Systems Command (NAVSUP) and supply stock points. Mini-computers will provide data processing instructions. While SPLICE is being developed, an interim system will be used.

System Status

Approaching Milestone II. Design with some testing. Testing is being accomplished using IDA.

Design Agency

NAVSUP, Washington, DC; FMSO, Mechanicsburg, PA

User Agency

Major claimants, NAVSUP, Supply stock points.

Location of Demonstration Site

Interim system being tested at NARDAC, San Diego, CA.

Documentation Available

Various presentation materials on the system and the ADS Plan.

Naval Aviation Logistics Command Management Information System (NALCOMIS)

Type of system

Logistics. Supply and maintenance with some personnel.

System Description and Objectives

The system is to provide an MIS for the Naval aviation organization to include material management, maintenance management, aircraft inventory, aircraft readiness and configuration management. The system will tie together 91 Navy and Marine Corps Air Stations, major Navy ships with aviation units aboard and Marine Air Groups.

System Status:

Approaching Milestone I. Design Phase.

Design Agency

Naval Air Systems Command (NAVAIR), Washington, DC

User Agency

See System Description

Location of Demonstration Site

None at this time.

Documentation Avaialble

Mission Element Needs Statement (MENS). (Other documentation at NAVAIR).